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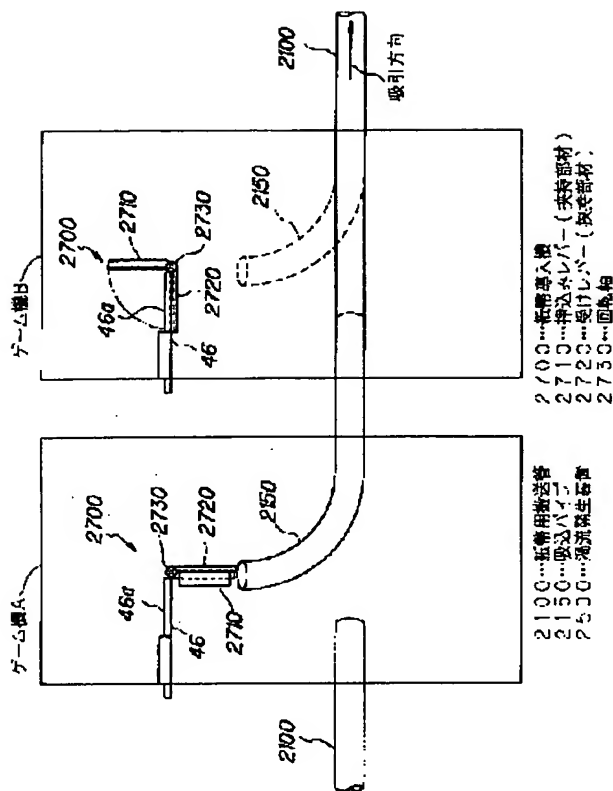
Summary

(57) [Abstract]

[Technical problem] The conveyance workability of a game medium is improved and
user-friendliness is improved.

[Means for Solution] Since insertion installation was carried out and reversal of an
insertion pipe of an insertion pipe was enabled in the place in which the game
medium of a game medium conveyance pipe tends to pile up Since the airstream
exists in the core of the previous insertion pipe with which it fell after the game
medium which piled up in the wall lower part of an insertion pipe was able to pull up
with frictional resistance with the wall of an insertion pipe, and the game medium fell,
the ejection workability of a game medium becomes unnecessary and a game
medium can improve user-friendliness while riding on an airstream, coming to be
conveyed again and the conveyance workability of a game medium improving.

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CLAIMS

[Claim(s)]

[Claim 1] Game medium carrier system characterized by providing the following. The conveyance pipe for conveying a game medium in the game medium carrier system for conveying the game medium dealt with by each device installed in the amusement center The conveyance medium introduction machine for connecting with the aforementioned conveyance pipe and introducing a conveyance medium into this conveyance pipe The airstream generating means for moving the game medium

which generates an airstream in a conveyance pipe and exists in a conveyance pipe. The stay prevention means for returning the game medium which had the control system for performing the transfer control of a game medium in response to the bill recovery demand from one of devices, and insertion installation was carried out at n places of the aforementioned conveyance pipe, and this heart was made to reverse the insertion pipe inserted in these n parts by carrying out a pipe center, and piled up in this insertion pipe into the airstream in a conveyance pipe.

[Claim 2] In game medium carrier system according to claim 1, the aforementioned stay prevention means is characterized by forming the hold crevice for holding a game medium in the wall of the aforementioned insertion pipe in at least one pipe hoop direction, and changing.

[Claim 3] In game medium carrier system according to claim 1 or 2, the aforementioned stay prevention means is characterized by having the wheel gear which forms tooth parts successively to a hoop direction and grows into the pipe periphery section of the aforementioned insertion pipe at it, and the pinion which gears on this wheel gear and is driven with power.

[Claim 4] In claims 1 and 2 or game medium carrier system given in 3 terms, the aforementioned airstream generator is characterized by being a vortex generator for generating a vortex in a conveyance pipe.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] this invention relates to the game medium carrier system for conveying the game medium dealt with by each device installed in the amusement center.

[0002]

[Description of the Prior Art] Introduce game media, such as coin and a medal, in a

conveyance pipe, airstreams, such as an eddy air current, are made to generate in a conveyance pipe as this kind of game medium carrier system, and what puts on an eddy air current and conveys a game medium is proposed.

[0003]

[Problem(s) to be Solved by the Invention] however, in such game medium carrier system Although it is satisfactory in conveying a short-distance conveyance on the street linearly, in being a long-distance conveyance way with deflection, a game medium When some game media pile up in the bend section in a conveyance way etc. and a game medium piles up without being able to convey a game medium completely While interrupting conveyance work, removing the conveyance pipe, taking out a game medium and conveyance workability's falling, there was a trouble of not being user-friendly. this invention aims at offering the game medium carrier system which did the ejection work of a game medium unnecessary and improved user-friendliness while it was made paying attention to such a trouble and improves conveyance workability.

[0004]

[Means for Solving the Problem] The place made into the summary of this invention for attaining this purpose consists in the matter indicated by each following item.

[1] In the game medium carrier system for conveying the game medium dealt with by each device installed in the amusement center The conveyance medium introduction machine for connecting with the conveyance pipe (1100) and the aforementioned conveyance pipe (1100) for conveying a game medium, and introducing a conveyance medium into this conveyance pipe (1100) (1400), The airstream generating means for moving the game medium which generates an airstream in a conveyance pipe (1100) and exists in a conveyance pipe (1100) (1500), In response to the bill recovery demand from one of devices, it has a control system (CS) for performing the transfer control of a game medium. In order to return the game medium which insertion installation was carried out at n places of the aforementioned conveyance pipe (1100), and this heart was made to reverse the insertion pipe (1120) inserted in these n parts by carrying out a pipe center, and piled up in this insertion pipe (1120) into the airstream in a conveyance pipe (1100), Game medium carrier system characterized by having a stay prevention means.

[0005] [2] In game medium carrier system given in 1 term, the aforementioned stay prevention means is characterized by forming the hold crevice (1126) for holding a game medium in the wall of the aforementioned insertion pipe (1120) in at least one pipe hoop direction, and changing.

[0006] [3] In game medium carrier system 1 or given in dyadic, the aforementioned stay prevention means is characterized by having the wheel gear (1125) which forms tooth parts successively to a hoop direction and grows into the pipe periphery section of the aforementioned insertion pipe (1120) at it, and the pinion (1140) which gears on this wheel gear (1125) and is driven with power.

[0007] [4] In game medium carrier system 1, 2, or given in 3 terms, the

aforementioned airstream generating means (1500) is characterized by being a vortex generator for generating a vortex in a conveyance pipe (1100).

[0008] Next, an operation of invention indicated by each aforementioned item is explained.

[0009] [1] In game medium carrier system given in a term, a control system (CS) performs the transfer control of a game medium in response to the bill recovery demand from a device. The game medium dealt with by each device is introduced into a conveyance pipe (1100) by the conveyance medium introduction machine (1400). At this time, the airstream is generated by the airstream generating means (1500) in the conveyance pipe (1100), and the game medium which exists in a conveyance pipe (1100) becomes movable.

[0010] Insertion installation of the stay prevention means is carried out at n places of a conveyance pipe (1100), and the n places are selected by the place in which a game medium tends to pile up. The insertion pipe (1120) of a conveyance pipe (1100) uses a pipe center as this heart, and reversal of it is attained. It falls, after an insertion pipe (1120) is reversed and a game medium is able to pull up, if the game medium piled up in the lower part of an insertion pipe (1120), and it comes to return into the airstream in a conveyance pipe (1100), rides on an airstream, and a game medium comes to be conveyed again.

[0011] [2] Although a game medium can be pulled up with frictional resistance with the wall of an insertion pipe (1120) in game medium carrier system given in a term if an insertion pipe (1120) is reversed when a game medium piles up in the lower part of the wall of an insertion pipe (1120) If the game medium can pull up, by it, the reaction force which a game medium receives from the wall of an insertion pipe (1120) will decrease, and frictional resistance decreases, and a game medium will slide on the wall of an insertion pipe (1120), and will come to return to the original position of the lower part of the wall of an insertion pipe (1120). Since the hold crevice (1126) is formed in the wall of an insertion pipe (1120) at at least one pipe hoop direction, soon, where a game medium is held and held in the hold crevice (1126) of an insertion pipe (1120), it can pull up greatly, and if the crevice mouth of a hold crevice (1126) comes to turn to a slanting lower part, a game medium will come to fall from the crevice mouth of a hold crevice (1126) soon. Since the airstream is flowing in the core of the insertion pipe (1120) which is the point from which a game medium falls, the game medium which fell rides on an airstream and is conveyed again.

[0012] In game medium carrier system given in a term, [3] The aforementioned stay prevention means Since it has the wheel gear (1125) which forms tooth parts successively to a hoop direction and grows into the pipe periphery section of the aforementioned insertion pipe (1120) at it, and the pinion (1140) which gears on this wheel gear (1125) and is driven with power With power, through a pinion (1140) and a wheel gear, reversal of an insertion pipe (1120) is attained automatically continuously or intermittently, a game medium ceases to pile up in a conveyance

pipe (1100), and user-friendliness becomes good.

[0013] [4] In game medium carrier system given in a term, the aforementioned airstream generating means (1500) is a vortex generator for generating a vortex in a conveyance pipe (1100). Here, for example, the vortex generator has the eddy generating unit for generating an eddy, and the suction unit which generate an eddy while attracting the air in this eddy generating unit and generating an airstream, for example, is a blower. If two or more suction units are connected in series, the suction force can be made powerful.

[0014]

[Embodiments of the Invention] Hereafter, the gestalt of 1 operation of this invention is explained based on a drawing. In addition, this invention is not limited to the gestalt described below. this invention is the carrier system for being installed in an amusement center and conveying the conveyed bodies, such as a bill, by the spiral airstream especially. In the amusement center, two or more game machine islands where game machines, for example, a slot machine, such as a coin game machine, are arranged at a single tier or a biseriate at two or more sets and a common stand are arranged. The carrier system of this invention can be installed for every game machine islands of these.

[0015] As shown in drawing 2, on a stand 3, the game machine island 1 arranges the game machine 2 which are four slot machines to a single tier, and changes. The number and the number of trains of the game machine 2 which are arranged at three stands are not limited to this. For example, you may arrange 20 sets of ten game machines 2 on a stand 3 at each biseriate. Although being arranged in parallel is common. as for the game machine island 1, it is not limited to this. As shown in drawing 3, the outline of the carrier system for amusement centers equips $n+1$ place of the conveyance pipe TB for conveying the conveyed body, and the conveyance pipe TB with $n+1$ node units NU1-NU n by which insertion installation is carried out, and control-system CS for controlling operation of each node units NU1-NU n .

[0016] All, each node units NU1-NU n are open for free passage with the conveyance pipe TB so that an airstream may flow in the conveyance pipe TB. Two or more sorts of units from which a function differs are contained in n node units NU1-NU n . The 1st kind is the node unit NU for vortex generating for generating a spiral airstream in the conveyance pipe TB, and generating the airstream for moving the conveyed body which exists in the conveyance pipe TB. The 2nd kind is the node unit NU for conveyed body introduction for introducing the conveyed body to the conveyance pipe TB. The 3rd kind is at least one node unit NU for conveyed body ejection for performing ejection of the conveyed body from the conveyance pipe TB.

[0017] What has the cross-section configuration and the cross section to which the conveyance pipe TB can hold the conveyed body in the interior is used. Moreover, the conveyance pipe TB can be divided into two or more lines according to the kind of conveyed body. For example, it can carry out to two for the object for coin

conveyance, and bill conveyance. Moreover, you may divide still more finely according to the kind of coin, and the kind of bill. The signal-line group SL for transmitting the signal which shows the state of each node units NU1-NU_n except NU0, and the signal which shows the state of the environment where they are placed in this control-system CS While sending the instructions for controlling operation of each node units NU1-NU_n In each node units NU1-NU_n, it has the information processor PS which performs information processing for controlling the corresponding node units NU1-NU_n based on the bus BL for reading the produced data, and the signal read through the signal-line group SL. The aforementioned signal-line group SL is formed corresponding to the terminal unit TU to which it is connected. Therefore, when the signal-line group SL is connected about the terminal units TU1-TU_n, the signal-line group SL of n group will be formed.

[0018] In addition, the signal-line group SL contains the signal line of a required number according to the number of the signals outputted from a terminal. Therefore, the number of signal lines with which the signal-line group SL connected to them contains the terminal unit TU from which the number of the signals to output differs differs. In addition, the signal-line group SL standardizes and you may make it contain the signal line of this number altogether. As shown in drawing 3 , control-system CS has two or more terminal units TU arranged for every node unit NU1-NU_n. This terminal unit TU and information processor PS are connected by the signal-line group SL and Bus BL.

[0019] This terminal unit TU collects various status information, such as the information which shows the state about each node unit NU1-NU_n, for example, a conveyance demand of the conveyed body, a taking-out demand of the conveyed body, and an incorporation demand of the conveyed body, from a sensor, a switch, etc. which are installed in each node unit NU1 - NU_n correspondence (illustration ellipsis), and sends the status information to an information processor PS through the signal-line group SL. On the other hand, the directions from an information processor PS are received through Bus BL, and 1 for driving each node unit NU1-NU_n or operation of two or more actuators (illustration ellipsis) is controlled.

[0020] Moreover, the data which express the state of itself depending on a node unit may exist. Moreover, the data which express the state depending on the environment where the node unit is placed may exist. For example, about data, such as supply number of sheets of the coin in the coin feeder mentioned later, and incorporation number of sheets of the bill in the bill identification unit which leads to bill introduction equipment, it can send to an information processor PS through Bus BL from the terminal unit TU. An information processor PS can perform informational collection and control of operation directly, without on the other hand forming such a terminal unit TU. For example, although there is no node unit NU0 in the bottom of control of control-system CS, it is a unit. This node unit NU0 is a unit which can operate independently and can be controlled independently in other node units NU1-NU_n. For example, equipment which operates regularly hits this.

[0021] Moreover, about the node unit NU0 which is not prepared using the terminal unit TU about the node units NU1-NU_n in which the terminal unit TU is formed, informational collection and control of operation can be performed directly. As shown in drawing 3, the node unit NU0 showed the state where it did not put under jurisdiction of a control system. However, you may make it put all the node units NU0-NU_n under jurisdiction of a control system.

[0022] The terminal unit TU of 1 is making it correspond to the node unit NU of the expedient top of explanation, and 1, as shown in drawing 3. However, in fact, if the generating situation of information, such as arrangement of the equipment in an amusement center and various signals, is taken into consideration, it may be more desirable about two or more node units NU to make the terminal unit TU of 1 correspond. For example, since two or more node units NU are formed, these can be summarized to the game machine 2 which is a slot machine, and the terminal unit of 1 can be made to correspond to it so that it may mention later. About the information acquired from the game machine 2, if you do in this way, while it will be sufficient if it inputs into the terminal of 1, and wiring becomes easy, informational unitary management can be performed and it is convenient.

[0023] The gestalt of the operation of the carrier system for amusement centers which used such a node unit NU for below is explained. As shown in drawing 4, the composition of the carrier system for amusement centers arranged for every game machine island contains the 1st carrier system 1000 which conveys the conveyed body which is coin, and the 2nd carrier system 2000 which conveys the conveyed body which is a bill. The 1st carrier system 1000 and 2nd carrier system 2000 can operate independently, respectively. However, the 1st carrier system 1000 and 2nd carrier system 2000 are controlled by respectively common control-system CS. Of course, a separate control system can be formed in the 1st carrier system 1000 and 2nd carrier system 2000, and it can also consider as the composition controlled independently, respectively. As shown not only in this but in drawing 44, you may form only bill carrier system. This bill carrier system is constituted like the 2nd carrier system 2000, and it is controlled similarly and it can operate similarly. Therefore, it supposes that the same sign as the portion equivalent to this bill carrier system is attached, and the duplicate explanation is omitted.

[0024] As shown in drawing 4, carrier system is installed in the amusement center where the game machine 2 which is a slot machine has been arranged, and the game medium and bill which are dealt with in the game machine 2 are conveyed as the conveyed body. Coin is collected from each game machine 2 while more specifically supplying the coin used in each game machine 2 by the 1st carrier system 1000 to each game machine 2. Moreover, coin is collected in the coin safe 1600 prepared for every game machine island if needed. On the other hand, the 2nd carrier system 2000 recovers the bill fed into each game machine 2 in the bill safe 2600 which can be prepared every game machine 2. That is, coin is conveyed with the 1st carrier system 1000, and a bill is conveyed with the 2nd carrier system 2000. Therefore, as

a conveyance pipe TB, the conveyance pipe 1100 for coin for conveying coin as the conveyed body and the conveyance pipe 2100 for bills for conveying a bill as the conveyed body exist. In addition, as a game medium, although coin is used, you may use tokens, such as not coin but a medal, here.

[0025] As shown in drawing 5, the game machine 2 which is a slot machine has the game statement part 10 which performs a game, the handle 15 for performing a game, the game machine hopper 30 for paying out the coin used for a game, the bill accession department 40, and the coin accession department 50. The judgment of bill injection RO 41 which receives an injection of a bill, and the truth of the thrown-in bill, and the judgment of a denomination are performed, and the bill accession department 40 has the bill discrimination circuit (illustration ellipsis) which incorporates the bill which can be taken in, and the interior 44 of a proposal which shows the incorporated bill to the interior, as shown in drawing 1, drawing 5 and drawing 45 – drawing 48. As shown in drawing 36, the counter 43 for carrying out counting of the taking-in number of sheets is formed in the bill discernment section 42. The bill discrimination circuit 42 outputs the information on the taking-in number of sheets in which the counter 43 carried out counting while outputting the information on a denomination.

[0026] The bill accession department 40 has the standby stage 46 where the thrown-in bill stands by. The standby stage 46 is formed in the shape of a quirk that the both groove face 46a should show both edges with a longer rectangle-like bill, and the slit 47 which pierces through the standby stage 46 in the vertical direction is formed in the standby stage 46 corresponding to the near symmetrical line which is parallel to the longitudinal direction of a bill. The slit length of a slit 47 is set up for a long time in consideration of the position gap error of the bill in a standby state to the greatest length of the longitudinal direction of the bill which should be thrown in. Moreover, the slit width of a slit 47 is set as about 8–10mm.

[0027] The coin accession department 50 performs injection RO 51 of coin, the truth of the coin thrown into the interior, and the judgment of a denomination, and has the coin discernment section 52 (refer to drawing 36) which incorporates the coin which can be taken in. The coin discernment section 52 has the counter 53 (refer to drawing 36) which carries out counting of the taking-in number of sheets of coin. The incorporated coin is sent to the game machine hopper 30 through the chute which is not illustrated. Also in this coin accession department 50, denomination information, the information which shows the coin number of sheets in which the counter 53 carried out counting can be outputted. Each output is connected with the terminal unit TU corresponding to the slot machine 2 concerned in the bill accession department 40 and the coin accession department 50.

[0028] The game machine hopper 30 has the coin reservoir 31 which stores coin, and the send section 32 which pays out the coin currently stored in response to the expenditure directions from the game statement part 10, as shown in drawing 5. The drive circuit of the send mechanism of coin, its drive motor, and a motor is

established in the send section 32 (neither is illustrated). This game machine hopper 30 pushes up the coin currently stored in the coin reservoir 31 through the path which is not illustrated by the send section 32, and supplies it to the game statement part 10. The capacity of the coin which this game machine hopper 30 can store is an amount which can pay out multiple times at least.

[0029] This game machine hopper 30 has the overflow mechanism 60 for sending the overflowing coin to the coin introduction machine 2400 mentioned later, when the coin currently stored exceeds capacity. An overflow mechanism 60 has the counter 61 for carrying out counting of the coin number of sheets discharged by the part. The output of this counter 61 is connected to the terminal unit TU corresponding to the game machine hopper 30 concerned, and an enumerated data is outputted to this terminal unit TU (refer to drawing 36). In addition, the coin thrown into the coin accession department 50 can be directly sent to the coin introduction machine 2700.

[0030] The coin accumulation state detection sensor 33 for detecting the accumulation state of coin is formed in this game machine hopper 30. As for this coin accumulation state detection sensor 33, the output sends the signal which is connected to the terminal unit TU and shows a coin accumulation state to this terminal unit TU (refer to drawing 36). This coin accumulation state detection sensor 33 detects that consisted of microswitches etc., operated when the amount of coin currently stored in the game machine hopper 30 became less than the capacity defined beforehand, and the amount of coin decreased. The terminal unit TU incorporates this signal as a coin supply demand signal over the corresponding slot machine 2.

[0031] To two or more above-mentioned node units NU installed in the above-mentioned conveyance pipe 1100 for coin The vortex generator 1500 which operates as the above-mentioned unit NU for vortex generating, The coin feeder 1200 for introducing the coin which should be supplied in the above-mentioned conveyance pipe 1100 for coin as the above-mentioned unit NU for conveyed body introduction (game medium feeder), Two or more sets of the branching machines 1300 for taking out the coin which has the inside of the above-mentioned conveyance pipe 1100 for coin conveyed as the above-mentioned node unit NU for conveyed body ejection are contained at least. To each slot machine 2, these branching machines 1300 are used in order to supply coin as a game medium. Moreover, it has further the coin introduction machine 1400 for introducing the coin which should be collected in the above-mentioned conveyance pipe 1100 for coin as the above-mentioned unit NU for conveyed body introduction.

[0032] As shown in drawing 4 , insertion connection of two or more sets installed in slot machine 2 correspondence, one set installed in coin safe 1600 correspondence, and the one set installed in coin feeder 1200 correspondence is made at the conveyance pipe 1100 for coin, and the branching machine 1300 is arranged. The branching machine 1300 of slot machine 2 correspondence branches coin from the conveyance pipe 1100 for coin, and supplies coin to the game machine hopper 30 of

the slot machine 2 which corresponds, respectively. Moreover, the branching machine 1300 of coin safe 1600 correspondence branches coin from the conveyance pipe 1100 for coin, and is made to hold in the coin safe 1600. Furthermore, the branching machine 1300 of coin feeder 1200 correspondence separates the coin collected from an airstream, and returns it to the coin feeder 1200.

[0033] In a slot machine 2, the branching machine 1300 formed in a slot machine 2 is installed, as shown in drawing 13. That is, the game machine hopper 30 is installed in the lower part of a slot machine 2, and the interior material 34 of a proposal which it shows to coin at the coin reservoir 31 of the game machine hopper 30 concerned at the posterior part is arranged. The branching machine 1300 is installed in the upper part behind this game machine hopper 30, i.e., the upper part of the above-mentioned interior material 34 of a proposal. Opening 1360a of the branching path 1360 of this branching machine 1300 is put on the position which drops coin in the above-mentioned interior material 34 of a proposal.

[0034] The conveyance pipe 1100 for coin is connected to the branching machine 1300 arranged in a slot machine 2. In addition, on this slot machine 2, the conveyance pipe 2100 for bills is located above the above-mentioned branching machine 1300. The vortex generator 2500 which conveys the bill handed over inside by the vortex in this conveyance pipe 2100 for bills, and operates as the above-mentioned unit NU for vortex generating further as shown in the above-mentioned conveyance pipe 2100 for bills at drawing 4, Two or more sets of the bill introduction machines 2700 for introducing the bill which should be handed over in the above-mentioned conveyance pipe 2100 for bills as the above-mentioned node unit NU for conveyed body introduction As the above-mentioned node unit NU for conveyed body ejection, the bill eccrisis machine 2800 for taking out a bill from the inside of the above-mentioned conveyance pipe 2100 for bills is contained at least. In addition, in the example shown in drawing 4, the bill has composition which reciprocates between the bill eccrisis machine 2800 and the bill introduction machines 2700 in the most distant position from this bill eccrisis machine 2800. Therefore, the pipe which a bill can move to the interior easily and which has a large diameter relatively is used for the conveyance pipe 2100 for bills to which between the bill eccrisis machine 2800 and the bill introduction machines 2700 in the most distant position from this bill eccrisis machine 2800 is connected. The pipe of a small diameter is used for the relative target which can transmit a vortex to the conveyance pipe 2100 for bills to which between the bill introduction machines 2700 and the vortex generators 2500 which are between the bill eccrisis machine 2800 and the vortex generators 2500 and in the most distant position from the bill eccrisis machine 2800 on the other hand is connected, respectively. Of course, it is also possible to constitute all from a pipe of a large diameter.

[0035] The hose made from plastics with which both the conveyance pipe 1100 for coin and the conveyance pipe 2100 for bills have flexibility, for example is used. Of course, it is not limited to such a hose. However, if such a hose is used, since each

conveyance pipe can be bent freely, piping becomes easy. Moreover, it becomes easy [processing of cutting etc. is also easy, and], in case the carrier system of this invention is installed on the spot, since it is light to construct this kind of hose.

[0036] As shown in drawing 45, the intake pipe 2150 which constitutes a part of conveyance path of the conveyance pipe 2100 for bills is formed corresponding to the bill accession department 40 of each game machine 2. The cartridge-like intake regio-oralis material 2160 is attached at the nose of cam of the intake pipe 2150, and the nose-of-cam mouth of the intake regio-oralis material 2160 is deeply cut by the slanting lower part. the intake pipe 2150 -- corresponding -- this tubeside of the bill conveyance pipe 2100 -- a pipe -- a member 2170 is attached -- having -- inlet port -- a member 2160 -- corresponding -- a pipe -- the end connection 2180-ed of a member 2170 is deeply cut by the slanting upper part inlet port -- the nose-of-cam mouth of a member 2160, and a pipe -- although the peristome with both end connections 2180-ed of a member 2170 contacts and continuation of a conveyance path is enabled, if a vortex flows in the bill conveyance pipe 2100 and the inside of a pipe becomes negative pressure, it will stick more

[0037] The **** arm 2190 was arranged in the both sides of the intake pipe 2150, the end face section of the **** arm 2190 was supported possible [rotation], and the point of the **** arm 2190 has fixed to the intake regio-oralis material 2160. If the **** arm 2190 stands up, the intake pipe 2150 will bend, if it becomes the intake position which the nose-of-cam mouth of the intake regio-oralis material 2160 turned to upwards and the **** arm 2190 lodges, the intake pipe 2150 will be restored and the nose-of-cam mouth of the intake regio-oralis material 2160 will become the connecting location to which continuation of a conveyance path is attained in contact with the end connection 2180-ed toward a horizontal direction. Since the hose made from plastics with flexibility etc. is used, even if the conveyance pipe 2100 for bills repeats the deformation over a long period of time, it has few secular change and they are excellent in endurance.

[0038] Fundamentally, the above-mentioned vortex generators 1500 and 2500 generate a vortex by the same principle. Then, the vortex generator 1500 for making the conveyance pipe 1100 for coin generate a vortex is explained first, and, subsequently to a center, difference is explained about the vortex generator 2500.

[0039] Next, the vortex generator 1500 used in this invention is explained with reference to drawing 4, drawing 6, drawing 7 - drawing 9. The vortex generator 1500 used by this invention is installed in the lowest style side of the flow of coin in the conveyance pipe for coin with which insertion connection of two or more sets of the branching machine 1300 of two or more [1200 or] coin feeders and the coin introduction machines 1400 is made, as shown in drawing 4. This vortex generator 1500 has the eddy generating unit 1510 for generating an eddy, and the suction unit 1570 which generates an eddy while attracting the air in this eddy generating unit 1510 and generating an airstream.

[0040] The suction unit 1570 can consist of blowers. For example, it can consider as

the composition which attracts a blower using 1 sets or two or more sets. For example, as shown in drawing 19 , four sets of blowers are connected in series, and powerful suction can be performed. The conveyance pipe 1100 for coin and the connection hose 1530 for connecting with the suction unit 1570 are connected to the eddy generating unit main part 1520 in which the mechanism for eddy generating was carried, and the eddy generating unit 1510 generates an eddy, as shown in drawing 6 .

[0041] The eddy generating unit main part 1520 consists of cylinders with which the vertical side was sealed. The connection pipe 1511 for connecting the conveyance pipe for coin is formed in the side peripheral surface of the eddy generating unit main part 1520. The above-mentioned conveyance pipe 1100 for coin is connected to the edge which projected this connection pipe 1511 on the outside of the eddy generating unit main part 1520. On the other hand, the notch 1512 is formed in a part of opening edge by the side of the nose of cam projected inside the eddy generating unit main part 1520. This notch 1512 is formed in the position where the auxiliary slit 1523 mentioned later counters. The reason for having formed the notch 1512 in such a position is for making it a part of airstream which flows through the connection pipe 1511 flow towards the direction of the auxiliary slit 1523.

[0042] The main slit 1524 of the two shape of a rectangle formed, respectively is formed in the direction which carries out an abbreviation rectangular cross with the shaft orientations of the connection pipe 1511, and the cross section of the connection pipe 1511, abbreviation, etc. have come to spread the sum total of the effective-area product of the two main slits 1524 on the upper surface 1521 of the eddy generating unit main part 1520. Moreover, the box-like cover section 1525 is formed in the part in which the two main slits 1524 of the upper surface 1521 were formed so that these main slits 1524 may be covered. The connection pipe 1527 for connecting the hose 1530 for suction which has flexibility covers, and it pierces through the side of the section 1525 on the side of the cover section 1525, and is prepared in it. This connection pipe 1527 is open for free passage with the interior of the cover section 1524. In addition, you may really form the cover section 1525 and the connection pipe 1527 by the object.

[0043] Moreover, the connection pipe 1522 pierces through the upper surface 1521 concerned in the upper surface 1521 between the edge in the eddy generating unit main part 1520 of the connection pipe 1511, and the main slit 1524, and is prepared in it. This connection pipe 1522 is open for free passage with the interior of the eddy generating unit main part 1520. As shown in drawing 7 and drawing 8 , it is installed in the peripheral surface of the connection pipe 1522 in the eddy generating unit main part 1520 so that the auxiliary rectangle-like slit 1523 may be extended for a long time in accordance with the shaft orientations of the connection pipe 1522. The effective-area product of the auxiliary slit 1523 is prepared so that the cross section of the connection pipe 1511, abbreviation, etc. may be spread and may become.

[0044] The edge of the outside of the eddy generating unit main part 1520 of the connection pipe 1522 and the tee 1528 which protruded on the connection pipe 1527 are connected with the connection hose 1529 which has flexibility. The airstream generating means 1501 consists of the hose 1530 for suction stated above, the connection pipe 1527, a tee 1528, the cover section 1525, a connection pipe 1522 and a connection hose 1529, and a suction unit 1570 (refer to drawing 4) connected to the other end of the hose 1530 for suction. This airstream generating means 1501 attracts the air in the conveyance pipe 1100 for coin through the main slit 1524 and the auxiliary slit 1523, and the eddy generating unit main part 1520. This performs vortical generating and generation of an airstream.

[0045] When the airstream generating means 1501 attracts the airstream in the conveyance pipe 1100 for coin through the main slit 1524 and the auxiliary slit 1523, to the flow of the air from the connection pipe 1511 within the eddy generating unit main part 1520, the flow of the air which flows through the airstream and the auxiliary slit 1523 which flow through the main slit 1524 will shift, respectively, and will cross. Therefore, in the conveyance pipe 1100 for coin, two evil styles of a pitch, such as abbreviation, occur by the flow of the air which flows through the main slit 1524 and the auxiliary slit 1523.

[0046] Moreover, since the flow of the air which flows through the main slit 1524, and the flow of the air which flows through the auxiliary slit 1523 cross, the phase of two vortexes generated in the conveyance pipe 1100 for coin can be shifted. Furthermore, since the auxiliary slit 1523 is arranged in the position (position which shifted to connection pipe 1511. left-hand side in drawing 6) shifted in the direction which keeps away from the center of the connection pipe 1511 near the edge of the connection pipe 1511, a gap will produce it also by this in the phase of two vortexes generated in the conveyance pipe 1100 for coin.

[0047] By the way, the vortex of the air produced within a conveyance pipe conveys the conveyed body according to movement of the spiral of a vortex. As mentioned above, the evil generating unit 1510 used by this invention generates two vortexes of a pitch, such as abbreviation from which the phase shifted in the conveyance pipe 1100 for coin. Consequently, the pitch of a vortex becomes small. By this, the density of the vortex in the conveyance pipe 1100 for coin can be raised, and the conveyance capacity of carrier system can be heightened. Therefore, it can be said that it is suitable for conveyance of the conveyed body with big density like coin to use such an eddy generating unit.

[0048] By the way, although the cross section of the connection pipe 1511, abbreviation, etc. are spreading and carrying out the effective-area product of the main slit 1524 and the auxiliary slit 1523 with this operation gestalt You may make the effective-area product of the main slit 1524 and the auxiliary slit 1523 larger than the cross section of the connection pipe 1511. the effective-area product of the main slit 1524 and the auxiliary slit 1523 — the cross section of the connection pipe 1511 — comparing — this and abbreviation — whether it is equal Or air can be

smoothly passed from the connection pipe 1511 to the main slit 1524 and the auxiliary slit 1523 by making it somewhat larger than it.

[0049] In addition, you may form the connection pipe 1511, the connection pipe 1527, the cover section 1525, and the connection pipe 1522 in the eddy generating unit main part 1520 and one. Moreover, it is not limited to the configuration shown in drawing 6, namely, the configuration in that case can form rectangle-like the main slit 1524 and the auxiliary slit 1523, as long as you may form it in arbitrary configurations. The eddy generating unit 1510 mentioned above forms the auxiliary slit 1523 in the direction which carries out an abbreviation rectangular cross with the main slit 1524. However, the eddy generating unit used by this invention is not limited to this. For example, as shown in drawing 9, the main slit 1524 and the auxiliary slit 1523 can be formed on the same side, and the eddy generating unit 1510 can also be constituted.

[0050] In this eddy generating unit 1510, as shown in drawing 9, sequentially from [this] the connection pipe 1511 side, the auxiliary slit 1523 and the main slit 1524 have been arranged to abbreviation parallel, and are provided in the upper surface 1521 of the eddy generating unit main part 1520. The auxiliary slit 1523 is formed in the shape of a rectangle, is in the cross section of the connection pipe 1511, abbreviation, etc. by carrying out, and has an effective-area product. And it covers in the upper surface 1521 so that the auxiliary slit 1523 may be covered, and the section 1526 is formed in it. The tee 1528 which protruded on the connection pipe 1522 which opens the interior and the exterior of the cover section 1526 for free passage, and the connection pipe 1527 is connected to the cover section 1526 with the connection hose 1529 which has *****.

[0051] Thus, since the eddy generating unit 1510 shown in drawing 9 has formed the main slit 1524 and the auxiliary slit 1523 in the upper surface 1521 of the eddy generating unit main part 1520, it can manufacture the auxiliary slit 1523 at the same process as the main slit 1524 by carrying out stamping of the upper surface 1521. Therefore, the auxiliary slit 1523 can be manufactured easily. Here, the eddy generating unit main part 1520 is attracted, and vortical generating and an airstream generating means 1501 to generate an airstream consist of suction units 1570 (refer to drawing 4) connected to the other end of the hose 1530 for suction, the connection pipe 1527, a tee 1528, the cover sections 1525 and 11, the connection hose 1529, and the hose 1530 for suction. This airstream generating means 1501 attracts the air in the conveyance pipe 1100 for coin through the main slit 1524 and the auxiliary slit 1523, and the eddy generating unit main part 1520.

[0052] The airstream generating means 1501 The main slit 1524 and the auxiliary slit 1523, If the air in the conveyance pipe 1100 for coin is attracted through the eddy generating unit main part 1520 Since the flow of the air which flows through the main slit 1524 and the auxiliary slit 1523 to a flow of air from the connection pipe 1511 within the eddy generating unit main part 1520 crosses, respectively By the flow of the air which flows through the main slit 1524 and the auxiliary slit 1523, the

2 vortexes of pitches, such as abbreviation, occur in the conveyance pipe 1100 for coin. In addition, since the flow of the air which flows the main slit 1524, and the flow of the air which flows the auxiliary slit 1523 do not cross, the phase of two vortexes generated in the conveyance pipe 1100 for coin has come to spread abbreviation etc. Therefore, since two vortexes of a pitch, such as an abbreviation equistasis phase and abbreviation, occur in the conveyance pipe 1100 for coin, like the case where it is shown in drawing 6 mentioned above, the density of a vortex can be raised and the conveyance capacity of a transport device can be heightened.

[0053] In addition, since the composition of eddy generating units 1510 other than auxiliary slit 1523 is the same as that of what is shown in drawing 6, the explanation is omitted.

[0054] By the way, in the eddy generating unit shown in drawing 9, the wrap cover section 1525 is individually formed for the main slit 1524 and the auxiliary slit 1523. However, it is not limited to this. For example, the main slit 1524 and the auxiliary slit 1523 may be formed for the cover section of one wrap, the inside of the cover section may be divided into two rooms of auxiliary slit side 3 the main slit 1524 side with a wall, the hose 1530 for suction may be connected to the room by the side of the main slit 1524, and the connection hose 1529 may be connected to the room by the side of the auxiliary slit 1523.

[0055] Next, a coin feeder and a coin safe are explained with reference to drawing 10 and drawing 33. The coin feeder 1200 shown in drawing 10 has the coin reservoir 1210 which stores coin, and the coin send section 1220 which sends out the coin stored. The coin taking-in mouth 1110 of the conveyance pipe 1100 for coin for receiving the coin sent out in the coin send section 1220 is arranged. The coin send section 1220 has the drive circuit 1222 which sends out and drives the motor 1221 which drives the mechanism and the send mechanism as shown in drawing 33 which are not illustrated, and a motor 1221. The drive circuit 1222 drives a motor 1221 in response to a coin supply indication signal.

[0056] As for the coin feeder 1200, the coin accumulation state detection sensor 1211 is formed on it. This coin accumulation state detection sensor 1211 is detected about whether the amount of the coin in the coin reservoir 1210 has reached the capacity defined beforehand. Specifically, this sensor 1211 is constituted by a microswitch, the photoelectric switch, etc. Moreover, the counter 1231 for carrying out counting of the number of sheets of the coin to send out is formed in the coin send section 1220. The output of the coin accumulation state detection sensor 1211 and a counter 1231 and the input of the above-mentioned drive circuit are connected to the terminal unit TU (refer to drawing 33) to which the coin feeder 1200 concerned corresponds, respectively.

[0057] The coin safe 1600 shown in drawing 10 holds the coin which branched with the branching machine 1300 located in the degree of the above-mentioned coin feeder 1200. The coin accumulation state detection sensor 1610 is formed in this coin safe 1600. It is detectable whether the amount of the coin held in the coin safe

1600 reached by this the capacity defined beforehand. This coin accumulation state detection sensor 1610 is connected to the terminal unit TU mentioned later (refer to drawing 36). In order to enable movement of the coin safe 1600 itself concerned, the axle-pin rake 1620 is formed in this coin safe 1600.

[0058] In addition, the counter for carrying out counting of the number of sheets of hold coin can be prepared in the coin safe 1600. Fundamentally, the branching machine 1300 formed in this coin safe 1600 correspondence has the same structure as the branching machine 1300 which is mentioned later and which was formed in the slot machine 2. Therefore, about the branching machine 1300, it mentions later. [0059] The branching machine 1300 has the course switcher 1330 for taking out out of the conveyance pipe 1100 for coin concerned while barring the auxiliary passage section 1320 for maintaining the free passage state of the above-mentioned conveyance pipe 1100 for coin, and movement of coin which is having the inside of drawing 11 – the above-mentioned conveyance pipe 1100 for coin conveyed, as shown in 13. The above-mentioned course switcher 1330 performs change operation in response to a course change signal. The main passage section 1340 with which this course switcher 1330 is always directly linked with the above-mentioned conveyance pipe 1100 for coin, The coin attaching part 1360 for holding temporarily the coin which is open for free passage with this main passage section 1340, is prepared, and is taken out out of the conveyance pipe 1100 for coin at the time of a change (game medium attaching part), At the time, the free passage section 1347 of the above-mentioned coin attaching part 1360 and the mainstream way 1330 is covered. usually, at the time of a change While being located in the mainstream way 1330 and barring conveyance of coin, the above-mentioned free passage section 1347 is opened wide, and it has the selector valve 1331 which branches coin to the above-mentioned coin attaching part 1360.

[0060] A core box surrounds, it consists of members 1321, and the auxiliary passage section 1320 is open for free passage with the mainstream way 1340 through the two open RO sections 1345 and 1346 prepared in the above-mentioned mainstream way 1340. When the above-mentioned selector valve 1331 is in the state of interrupting the flow of the coin in the mainstream way 1340, itself is located between these two open RO 1345 and 1346. Therefore, as for the conveyance pipe for coin, a free passage state is maintained through opening 1345, the auxiliary passage section 1320, and opening 1346. In addition, in order to prevent coin flowing in, a grid or a network 1322 is formed in opening 1345.

[0061] the mainstream way 1340 — a wall surface — a member 1341 and the upper surface — it is with a member 1344, and it is constituted so that a cross section may become rectangle-like This is for planning the simplification of the structure, and the ease of opening and closing by making a selector valve 1331 into the shape of a rectangle. the two above-mentioned openings I — 345 and 1346 — this upper surface — it is prepared in the member 1344 Moreover, the free passage section 1347 with the coin attaching part 1360 is formed in the undersurface of this

mainstream way 1340. This is for coin to enable it to fall easily.

[0062] The above-mentioned selector valve 1331 has the rotation shaft 1332 in an end side, and this rotation shaft 1332 is supported free [rotation] with the bearing 1343 formed in the undersurface of the mainstream way 1340. On the other hand, the nose-of-cam side of a selector valve 1331 is notch ***** to slant. moreover, the undersurface by the side of a nose of cam 1333 — the base of the mainstream way 1340 — it can be close with a member 1342 This becomes possible to seal the free passage section 1347 nearly completely. The size of the mainstream way 1340 is defined in consideration of the size of the coin which should be conveyed. The circle which is inside a double circle to be shown in drawing 11 is equivalent to being alike in the size of coin. On the other hand, the outside of a double circle is equivalent to the size of a token.

[0063] The above-mentioned coin attaching part 1360 closes this to opening 1360a in the lower part side, and has the lid 1362 in which the opening and closing for holding coin temporarily are possible. That is, this coin attaching part 1360 has the structure emitted to the coin exterior currently held, when a lid 1362 opens. As for a lid 1362, a spring 1363 is attached in the end side. This spring 1363 is attached in the attachment section 1364. With the weight of the coin when becoming more than number of sheets with the number of sheets of the coin which collected in the coin attaching part 1360, this lid 1362 resists a spring 1366 and is opened. Coin falls and is emitted by it. However, in order to enable it for the weight of coin to open a lid 1362 easily, it is necessary to stop the strength of a spring. however, if a spring 1363 is weak, it will cut that a lid 1362 opens after the coin of few number of sheets has collected on the coin attaching part 1360 In this case, since air is inhaled from the exterior by the conveyance pipe 1100 for coin, there is a possibility that suction conveyance of the coin from the coin feeder 1200 may become weak.

[0064] Then, it is made for there to have been no lid 1362 in **** immediately by attracting a lid 1362 with this operation form depending on the weight of the coin which collected in the coin attaching part 1360 using the negative pressure of the conveyance pipe 1100 for coin. That is, the free passage section 1347 is covered and it is made for the suction force of the conveyance pipe 1100 for coin not to reach in the coin attaching part 1360 by the selector valve 1331. By this, a spring 1363 will cut the price of and open a lid 1362 in the weight of coin. In addition, a lid 1362 closes after fall of coin again with a spring 1363. However, when the force of a spring is set up weakly, it cannot finish closing completely by the relation with the weight of lid 1362 the very thing. In this case, by using the negative pressure of the conveyance pipe 1100 for coin, a spring 1363 can be reinforced and a lid 1362 can be completely blockaded for opening 1360a of the coin attaching part 1360.

[0065] This selector valve 1331 has the selector-valve drive 1350. This selector-valve drive 1350 has a rotary solenoid 1351, a power transmission device 1352, and the member 1353 with **. That is, a rotary solenoid 1351 is connected with the rotation shaft 1332 through a power transmission device 1352. a solenoid 1351 —

attachment — it is attached in switcher 1330 main part by the member 1353 [0066] The conveyance pipe connection section 1312 for connecting the conveyance pipe 1100 for coin and the fixed part 1314 for fixing branching machine 1300 the very thing are formed in the ends of the mainstream way 1340. In addition, although the branching machine 1300 shown in drawing 12 is the structure of opening the lid 1362 of the coin attaching part 1360 by the weight of coin, this invention is not limited to it. For example, you may make it open and close a lid 1362 under power using the actuator of rotary-solenoid 1366 grade, as shown in drawing 14 .

[0067] Next, it is installed in the conveyance pipe 1100 for coin by the key point (place in which coin tends to pile up). A stay prevention means is explained with reference to drawing 50 – drawing 52 . Insertion installation of the pipe 1110 for bonds is carried out at the key point of the conveyance pipe 1100 for coin.

[0068] As for the pipe 1110 for bonds, the order edge is attached in the conveyance pipe 1100 for coin. The interior of the insertion pipe 1120 is carried out to the pipe 1110 for bonds. the bearing which a ball bearing is carried out in between, and an outer-ring-of-spiral-wound-gasket member and an inner-ring-of-spiral-wound-gasket member are supported possible [rotation] mutually, and grows into a periphery in the front end section and the back end section of the pipe 1110 for bonds — the outer-ring-of-spiral-wound-gasket member of a member 1130 is inner-*(ing) firmly moreover, bearing — to the inner-ring-of-spiral-wound-gasket member of a member 1120, the insertion pipe 1120 is inner-*(ing) firmly thereby — the pipe 1110 for bonds — the insertion pipe 1120 — bearing — it is supported possible [rotation] through a member 1130

[0069] insertion of the pipe 1110 for bonds — through the hole 1115, the pinion 1140 was inserted in the pipe 1110 interior for bonds, and has geared on the wheel gear 1125 by which the pinion 1140 was formed in the periphery section of the insertion pipe 1120 in one The pinion 1140 is joined with the output shaft of a drive motor 1150. The hold crevice 1126 which can hold coin in the wall of the insertion pipe 1120 is formed in four pipe hoop directions. The both-sides wall of the hold crevice 1126 is prolonged over the back end section along with the pipe medial axis from the front end section of the insertion pipe 1120. If a drive motor 1150 drives as shown in drawing 52 , the insertion pipe 1120 rotates through a pinion 1140 and the wheel gear 1125, and the coin which piles up in the insertion pipe 1120 will be held in the hold crevice 1126 in which it is located below at the time, and will rotate with the hold crevice 1126. A hold crevice rotates to some extent, when it changes into the state where the crevice mouth of the hold crevice 1126 is horizontally suitable, even if coin tends to fall from the hold crevice 1126 in vibration of a machine etc., coin comes to be caught in the both-sides wall of the hold crevice 1126, and coin does not fall from the hold crevice 1126. Furthermore, it is again incorporated in the vortex which the coin held when the crevice mouth of the hold crevice 1126 in which the insertion pipe 1120 rotates and coin was held soon came to have turned

to a slanting lower part falls from the crevice mouth of the hold crevice 1126, falls toward the core of the insertion pipe 1120, and flows to the core of the insertion pipe 1120, and is conveyed to the back tubside of the conveyance pipe 1100 for front coin.

[0070] Although coin piles up temporarily at the key point of the conveyance pipe 1100 for coin, since the coin which is that the insertion pipe 1120 rotates and piled up is again incorporated by the vortex, stay will be canceled immediately and coin will be conveyed smoothly as a result. Next, the coin introduction machine used in this invention for recovery of coin is explained with reference to drawing 16 and drawing 17 .

[0071] The coin introduction machine 1400 has the induction main part 1470 which introduces coin, and the unification section 1440 for making the coin introduced from the induction main part 1470 join the conveyance pipe 1100 for coin. The induction main part 1470 has the shutter 1471 which can be opened and closed, the coin attaching part 1475 which stores coin temporarily after this shutter 1471 has closed the soffit, and the above-mentioned shutter motive style 1480. the induction main part 1470 — a wall surface — using a member 1473, it is formed in tubed and, specifically, a cross section has the shape of an outline rectangle, and the structure of making the shape of a square a wall surface — about the member supported possible [rotation of the rotation shaft 1472 of a shutter 1471] among members 1473, notch 1473a for a bearing 1474 and shunting of the shutter 1471 concerned at the time of opening a shutter 1471 is prepared

[0072] The shutter drive 1480 has a rotary solenoid 1481, a power transmission device 1482, and the supporter material 1483 that supports these. The driving force of a rotary solenoid 1481 is transmitted to the rotation shaft 1472 through a power transmission device 1482, and the opening-and-closing drive of the shutter 1471 is carried out. A shutter 1471 plugs up the soffit opening 1476 of the above-mentioned coin attaching part 1475 with a sealing state. Thereby, the leakage of the air to the conveyance pipe 1100 for coin can be prevented.

[0073] the unification section 1440 — a wall surface — a member 1446 — the shape of a cross-section rectangle — specifically, it is formed in a cross-section square-like cartridge And the above-mentioned induction main part 1470 is connected with the upper part of the center of the unification section 1440. It combines with T typeface and the building envelope is opening the unification section 1440 and the induction main part 1470 for free passage. Moreover, the conveyance pipe connection section 1412 for connecting the conveyance pipe 1100 for coin and the fixed part 1414 for fixing branching machine 1300 the very thing are formed in the ends of the unification section 1440.

[0074] Other examples of the coin introduction machine 1400 are shown in drawing 18 . This coin introduction machine 1400 of fundamental structure is the same as that of what was shown in above-mentioned drawing 16 . However, as for the coin introduction machine 1400 shown in drawing 18 , the structure of the induction main

part 1490 is simplified more. Namely, basic structure is a cylinder-like and, as for this induction main part 1490, a shutter 1491 also has disk-like structure in connection with this. This shutter 1491 is opened and closed with the shutter drive 1480 which has actuators, such as a rotary solenoid. Moreover, fundamentally, the structure of the unification section 1440 is the same as what is shown in drawing 16. However, the structure of the connection section 1415 with the conveyance pipe 1100 for coin is different. In the example of drawing 18, it has the structure where the edge of the conveyance pipe 1100 for coin is inserted inside the connection section 1415.

[0075] Next, the element which constitutes the bill carrier system 2000 is explained with reference to a drawing. In the carrier system shown in drawing 4, a bill is conveyed from the bill introduction machine 2700 to the bill discharge machine 2800 on the occasion of conveyance of a bill.

[0076] The vortex generator 2500 shown in drawing 19 is equipped with the connection hose 2530 which connects the eddy generating unit 2510, the suction unit 2570, and the above-mentioned eddy generating unit 2510 and the suction unit 2570. The suction unit 2570 is the same as the eddy generating unit 2510 in the eddy generating unit 1510 used for coin conveyance mentioned above, respectively, the suction unit 1570, and composition.

[0077] The eddy generating unit 2510 is connected to the conveyance pipe 2100 for bills by the side of the bill discharge machine 2800. Specifically, the eddy generating unit 2510 is connected to the suction unit 2570. Here, the eddy generating unit 2510 is connected to the suction unit 2570, and a vortex flows in the conveyance pipe 2100 for bills in the direction of the bill introduction machine 2700 to the bill discharge machine 2800. Thereby, it becomes possible to move a bill into the conveyance pipe 2100 for bills.

[0078] The vortex generator 2500 shown in drawing 20 has the eddy generating unit 2510 and the suction unit 2570. The example shown in drawing 20 is the same as the vortex generating unit of above-mentioned drawing 19. Next, discharge of the bill from the conveyance pipe 2100 by the bill discharge machine to the bill safe 2600 is explained with reference to drawing 21. Drawing 21 shows signs that the stage to F-G is changed later on. First, it is in the same state as the stage D of drawing 28 mentioned above in Stage F. Namely, in Stage F, the bill depression bar 2741 is depressed by straight line motion 2731, and the nose-of-cam 2741a is in the state attained to near the lower slit of the conveyance pipe 2100. In this state, a bill does not receive the restraint by the opening width of face of an up slit. Therefore, with the elasticity of itself, it is an extended state until it can touch a wall within the conveyance pipe 2100. In addition, in this stage, the stroke of rectilinear motion has not reached a minimum yet.

[0079] Stage G is in the state which the bill depression bar 2741 was depressed by straight line motion 2731, and the nose-of-cam 2741a passed the lower slit of the conveyance pipe 2100, and reached in the bill safe 2600. A bill bunch is being

inserted in a bill safe. In addition, the member 2699 which makes the bill bunch B accumulated the bill safe 2600 shown in drawing 21 is formed. therefore, the bill depression bar 2741 -- the -- it pushes up, a member 2699 is resisted and a bill bunch is depressed Thus, a bill bunch depresses by Fukashi who can spread within the bill safe 2600. This point is detected by limit switch 2738B, and a stroke minimum signal is outputted towards a terminal unit.

[0080] Next, Stage H is in the state which the bill depression bar 2741 pulled up from the conveyance pipe 2100 up. At this time, it is in the state where pushed up and the member 2699 pushed up the bill bunch B in a safe, by the bill safe 2600. The system which conveys a bill was explained by the above. Next, other examples of the device which can be used as a bill introduction machine or a bill discharge machine are explained with reference to drawing 22 - drawing 25 . In addition, the equipment shown in drawing 22 is different from the equipment explained so far in respect of a shutter style, and common in respect of others. Then, difference is explained as a center.

[0081] As shown in drawing 23 , it is a double door and the shutter 2724 of a rotating type is shown in open RO 2723 prepared in the center section of the stage 2721. This shutter 2724 has support-plate 2724b and rotation board 2724a supported by this. Rotation board 2724a has come to be able to carry out self-reset with the spring which it is supported possible [rotation of one of them], and is not illustrated. This example does not take an exceptional driving gear to a shutter. By being pushed with a depression bar, the force of a spring is resisted, and it rotates and opens. If a depression bar evacuates up, an own strength return will be carried out by the force of a spring.

[0082] Next, other operation forms of the carrier system of this invention are explained with reference to drawing 26 - drawing 28 .

[0083] The carrier system shown in drawing 26 is an example for which the method of recovery of coin differs from the system shown in above-mentioned drawing 4 in the 1st system which conveys coin. Here, it explains focusing on difference with the system of drawing 4 . The carrier system shown in drawing 26 has the feature in having replaced with the coin introduction machine 1400 and the branching machine 1300 for recovery, and having installed the coin introduction branching machine 1700 in the slot machine 2 which incorporates the coin for recovery, in the position near the vortex generator 1500. This coin introduction branching machine 1700 performs branching from the conveyance pipe 1100 for coin, and returning the coin introduced into the conveyance pipe 1100 for coin in introduction of the coin in the slot machine 2 with which it is installed, and a slot machine and other slot machines concerned to the coin feeder 1200.

[0084] The concrete structure of the coin introduction branching machine 1700 is shown in drawing 27 and drawing 28 . This coin introduction branching machine 1700 has the structure which compounded the coin introduction machine 1400 indicated to be the branching machine 1300 fundamentally shown in drawing 14 to drawing 16 .

However, since it has the form where the coin introduction machine 1400 appears in the portion of the auxiliary passage section 1320 of the branching machine 1300, the auxiliary passage section 1320 is installed outside with a pipe.

[0085] First, the portion equivalent to a coin introduction machine is explained. As shown in drawing 27 and drawing 28, this portion consists of an induction main part 1770 which carries out coin introduction, and the unification section 1740 for making the coin introduced from the induction main part 1770 join the conveyance pipe 1100 for coin. The induction main part 1770 has the coin attaching part 1775 which stores coin temporarily after the shutter 1771 and this shutter 1771 which can be opened and closed have closed the soffit, and the above-mentioned shutter drive 1780. Please refer to explanation of the coin introduction machine 1400 shown in drawing 16 mentioned above about the induction main part 1770 and the shutter drive 1780.

[0086] The unification section 1740 is formed in the shape of a cross-section rectangle, and a concrete target at a cross-section square-like cartridge. And the above-mentioned induction main part 1770 is connected with the upper part of the center of the unification section 1740. Moreover, the portion of the branching machine 1300 is connected with the central lower part of the unification section 1740. The coin introduction machine and the branching machine are sharing the unification section 1740. The auxiliary passage section 1720 is formed in this unification section 1740. An end carries out opening (1745) of this auxiliary passage section 1720 to a coin supply side, and the other end is carrying out opening to the vortex generator side (1746). And opening 1745 is equipped with network 1745a so that coin may not flow in. It joins together in the shape of a cross joint as a whole, and this coin introduction branching machine 1700 is formed.

[0087] When using this coin introduction branching machine 1700, after changing the selector valve 1731 which is equivalent to the branching machine 1300 first to a branching state, coin is introduced from which coin introduction machine. This is performed in this order also in the slot machine with which this coin introduction branching machine 1700 is installed. Therefore, this coin introduction branching machine 1700 can be used like the case where the usual coin introduction machine 1400 and the usual branching machine 1300 are used.

[0088] Next, other operation forms are explained to the carrier system pan of this invention with reference to drawing 29 and drawing 30. This operation form has a difference about a part for a stripping section and the eddy generating unit of coin in the 1st carrier system which performs coin conveyance compared with the operation form shown in drawing 4, and also there is no exceptional difference. Then, it explains focusing on this difference.

[0089] As shown in drawing 29, with this operation form, the branching machine 1300 for recovery used in drawing 4 is omitted.

[0090] Then, in order to separate coin from the conveyance pipe 1100 for coin, it replaced with the branching machine 1300 and the recovery hopper 1540 is formed

in the eddy generating unit 1510. This recovery hopper 1540 is installed under the eddy generating unit main part 1520 of the eddy generating unit 1510, as shown in drawing 30 . Since the cross section is drawn in a far big field compared with the conveyance pipe 1100 for coin till then, it becomes impossible for the vortex by which this was attracted by the eddy generating unit main part 1520 to be unable to support coin there. Consequently, coin will fall. When the coin which fell is stored in the coin reservoir 1541 and it becomes the weight which overcomes the balance of weight 1543, a lid 1544 opens and coin is discharged. Of course, you may make it open a lid 1544 using not weight but hand control, or an actuator.

[0091] Next, the composition of the control system used in this invention is explained with reference to drawing 31 -37. The control system of this invention can control carrier system as a system which became independent in itself. Moreover, it is also possible to be included in some systems which manage the whole amusement center for example, as shown in drawing 31 . Fundamentally, as for the system of drawing 31 , control-system CS of I is constituted by island 1 correspondence. And each control-system CS consists of two or more terminal units TU connected with the information processor PS through the signal-line group SL and Bus BL at this. The information processor PS of each control-system CS is connected with management computer MC through the information-transmission line CL. Each information processor PS sends various information, such as the information about the event generated on the island on which each is put, for example, an acceptance coin denomination, acceptance coin number of sheets, expenditure coin number of sheets, the number of coin safe hold coin, acceptance bill number of sheets, and bill safe hold number of sheets, to management computer MC through the information-transmission line CL.

[0092] An information processor PS is constituted by the computer system. This information processor PS is equipped with the central-process unit (CPU) 210, memory 220, an interface (I/F) 230, and account 100 million equipment 240 as shown in drawing 32 . The signal-line group SL connected with the above-mentioned information-transmission line CL and each terminal unit and Bus BL are connected to an interface 230. This interface 230 is equipped with the communications control function for transmitting information. Moreover, this interface 230 can make connection with external devices, such as storage.

[0093] As a communications control function of the above-mentioned interface 230, there are control of communication through the bus BL with the terminal unit TU, and management computer MC and control of communication through the information-transmission line CL. An information processor PS manages the right of a bus, and the communication with the terminal unit TU transmits wording of a telegram from an information-processor side to all or a specific terminal unit. Moreover, the Request to Send of data is sent to the specific terminal unit TU, and in response, an information processor PS puts the demanded data on wording of a telegram, and sends a specific terminal unit to an information processor PS through

Bus BL.

[0094] Moreover, an interface 230 has corresponding input port (not shown) for every signal-line group SL of two or more groups. That is, this input port exists in the terminal unit TU correspondence to which the signal-line group SL is connected. CPU210 investigates input port, and when the signal with the need that an information processor processes has inputted, it links the information which shows the contents of the signal with the transmitting agency information which shows the transmitting origin of the signal to the tail end of a queue.

[0095] In case CPU210 investigates input port, it contrasts with the contents of this queue. That is, when the present state is the same as the contents linked to the queue, it judges with there being no change in the signal of the input port. About the input port which the signal which is not linked to a queue has inputted on the other hand, the information which shows the contents of the signal with the transmitting agency information which shows the transmitting origin of the signal is linked to the tail end of a queue. And about the input port from which the signal linked to the queue changed into the state where it is not outputted in the present condition, the link of the signal is canceled of a queue. After the canceled signal is linked to a queue by this, the ranking on the queue about the signal linked to the queue advances. CPU210 performs processing from the most significant of this queue. Therefore, it can be said that this queue has given the priority of processing of an information processor PS.

[0096] Moreover, CPU210 investigates input port and detects the existence of the response to the directions which followed the specific terminal unit. In this case, a response does not necessarily come out of the terminal unit set as the object of directions. The information about the environment where the object is placed may be collected in a different terminal unit. In addition, in case the signal inputted into input port is linked to a queue, it can also link to the position of a high order more by contents [of the signal], and/or transmitting origin. That is, a priority processing can be performed.

[0097] A hard disk drive unit is used for storage 240, and the data for [which this information processor performs] programming and processing, data [finishing / processing], etc. are stored in it. A program stores in storage 240 what was sent from management computer MC through the information-transmission line CL. In addition, you may install the program stored in record media, such as a floppy disk and an optical disk. For example, floppy disk drive equipment can be connected to an interface 230, and the program recorded by the floppy disk can be stored in storage 240. Moreover, record media, such as ROM which wrote in the program, can also be carried.

[0098] CPU210 realizes processing which the flow chart mentioned later shows by incorporating the program stored in account 100 million equipment 240 in memory 220, and performing the program on memory 220 one by one.

[0099] Next, the terminal unit TU is explained with reference to drawing 33 -39. If it

is in the carrier system shown in drawing 4 which is one of the typical operation forms of this invention, the terminal unit TU may have the mode of two or more kinds as shown in drawing 33 -37 as a mode of the connection. In addition, drawing 38 shows the thing corresponding to the operation form shown in drawing 26 .

Drawing 39 shows other connection modes of a terminal unit.

[0100] The terminal unit TU shown in drawing 33 -39 is all constituted by the computer system. That is, it has a central processing unit (CPU) 110, memory 120, and an interface (I/F) 130. As for memory 120, ROM is prepared in the part. This ROM serves as a storage which stores the program which CPU110 performs. Of course, account 100 million equipments, such as a hard disk drive unit, are separately formed like the case of the information processor PS mentioned above, and you may make it store a program in this. Moreover, the program is stored in the floppy disk, the optical disk, etc., and these can be read through a reader. Of course, you may make it receive a required program, data, etc. from an information processor PS through the signal-line group SL.

[0101] The above-mentioned signal-line group SL is connected to an interface 130. This interface 130 is equipped with the communications control function for transmitting information. Moreover, this interface 130 can connect an external device with storage etc. CPU110 receives the various signals inputted through an interface 130, and when information with the need of notifying the contents of input to ** BE and an information processor PS exists, it notifies the information which should be notified using the signal line beforehand defined among the signal-line groups SL. For example, when the meaning is beforehand defined and exclusive-use-ized about each of two or more signal lines which constitute the signal-line group SL and an event occurs, generating of the event concerned can be notified by putting a signal on the signal line corresponding to the event. More specifically, demand signals, such as a coin supply demand, a coin recovery demand, and a bill recovery demand, can be assigned to the signal line of exclusive use, respectively, and a completion report signal of operation can be assigned to still more nearly another signal line.

[0102] In addition, when and the signal line of exclusive use is assigned to each, there is a problem that the number of signal lines increases. [the kind of signal] Then, how many information can also be coded and sent using that signal line. In this case, although an encoder and a decoder are needed, the number of few signal lines can notify many information. Moreover, extending to various systems is also possible. Here, the signal line here shall be assigned for every event.

[0103] Next, the connection relation between each terminal unit TU shown in drawing 33 -39 and a corresponding device is explained, respectively. The terminal unit TU shown in drawing 33 is formed corresponding to the coin feeder 1200. That is, the coin accumulation state detection sensor 1211, a counter 1231, and the drive circuit 1222 are connected to an interface 130. From the coin accumulation state detection sensor 1211, the information which shows the accumulation state of coin

is inputted and the send number of sheets of coin is inputted into the terminal unit TU from a counter 1231. On the other hand, the coin supply instructions from an information processor PS are sent to the drive circuit 1222 of the coin send section 1220 through the terminal unit TU. The drive circuit 1222 makes the motor 1221 of the coin send section 1220 of the coin feeder 1200 drive based on coin supply instructions. A counter 1231 carries out counting of the number of sheets of the coin sent out by the coin send section 1220. This enumerated data is sent to the terminal unit TU. The terminal unit TU sends the completion signal of supply to an information processor PS through the signal-line group SL while directing a halt of a motor 1221 in the drive circuit 1222, when the coin of ** BE and the number of sheets defined beforehand is sent out for the output of a counter 1231. Here, the number of sheets judged "Supply processing of coin is an end" is defined beforehand. This number of sheets can be defined in consideration of the coin retention volume of the coin attaching part 1360 of the branching machine 1300.

[0104] In addition, although the end of supply of coin was judged in the terminal unit itself, you may make it terminate supply of coin with the directions from an information processor here. In this case, the drive of supply of coin continues until coin supply instructions are lifted.

[0105] The terminal unit TU shown in drawing 34 is formed about a coin safe and the branching machine corresponding to this. It is got blocked and the drive circuit 1359 which drives the solenoid 1341 the detection sensor 1301 and for [which drive a selector valve 1331] being prepared in the branching machine 1300 is connected to this terminal unit TU. The coin accumulation state detection sensor 1610 for detecting the accumulation state of coin is connected to the coin safe 1600.

[0106] The terminal unit TU shown in drawing 35 is formed corresponding to the branching machine 1300 for coin recovery. In addition, since the processing load is small, this terminal unit TU can also make this processing use also [units / terminal / other]. For example, this processing can be made to perform to the terminal unit TU corresponding to the slot machine 2 in most near on which this branching machine 1300 is put, the terminal unit TU corresponding to the coin feeder 1200, etc.

[0107] The terminal unit TU shown in drawing 36 is formed corresponding to the game machine correspondence 2, i.e., a slot machine. This terminal unit TU is formed for every slot machine. The coin accumulation state detection sensor 33 formed in the game machine hopper 30, the counter 53 in which the coin discernment section 52 is formed, the counter 43 prepared in the bill discernment section 42, and the counter 61 prepared in the overflow mechanism are connected to this terminal unit TU. Moreover, about the branching machine 1300, it is got blocked in this terminal unit TU, and the detection sensor 1301 and the drive circuit 1359 of a solenoid 1351 are connected to it. Moreover, about the coin introduction machine 1400, it is got blocked and the detection sensor 1401 and the drive circuit 1489 of a solenoid 1481 are connected. Furthermore, the lock mechanism 2789 in which get it blocked and the bill detection sensor 2769 and the detection sensor 2701 and the drive circuit

2739 for bill introduction which drives a motor 2731, the shutter drive circuit 2759 that drives a solenoid 2751, and a solenoid 2781 are driven is connected about the bill introduction machine 2700.

[0108] Next, the mechanical structure of the bill introduction machine 2700 is explained. As shown in drawing 1 and drawing 46 – drawing 48, the bill introduction machine 2700 has the pinching member of a couple, and the pinching member of a couple is received with the indentation lever 2710, and consists of a lever 2720. The indentation lever 2710 and the receptacle lever 2720 sandwich the bill made to stand by on the standby stage 46 from a front-face and rear-face side, and move a bill to a delivered position from a position in readiness. The indentation lever 2710 and the receptacle lever 2720 are supported possible [rotation] focusing on the same axis of rotation 2730 prolonged horizontally.

[0109] The indentation lever 2710 has stood up in the time (refer to drawing 46 (a)) of un-introducing. It is for bending a bill by the symmetrical line in alignment with the longitudinal direction the first stage at the time of introduction (referring to drawing 46 (b)), and pushing in in the slit 47 of the standby stage 46. the receptacle lever 2720 It is allotted to the position which faced the slit 46 from the lower part the first stage at the time of un-introducing and introduction (refer to drawing 46 (a) – (b)), and the bending section of the bill bent by the aforementioned indentation lever is caught. At the time of introduction, at a telophase (refer to drawing 46 (c)), the indentation lever 2710 and the receptacle lever 2720 move to the aforementioned delivered position, where the indentation lever 2710 rotated normally with power (it rotates counterclockwise in drawing 46), and received, and resist the energization force, it rotated the lever 2720 normally, it received with the indentation lever 2710 and a bill is pinched with a lever 2720. a delivered position — the indentation lever 2710 and the receptacle lever 2720 — each point — hanging — **** — the lower part of each point — the inlet port of the intake pipe 2150 — the nose-of-cam mouth of a member 2160 is located If a bill is moved to a delivered position, the receptacle lever 2720 will be restrained by the lock member (not shown).

[0110] When handing over a bill, the indentation lever 2710 is reversed slightly (in drawing 46, it rotates clockwise), it receives with the indentation lever 2710, and the force with a lever 2720 to insert is loosened. if the force to insert is loosened — a bill — falling — and inlet port — it absorbs with the negative pressure in a member 2160 — having — inlet port — it passes along the nose-of-cam mouth of a member 2160, and is introduced in the conveyance path of the conveyance pipe 2100 for bills What is necessary is just to reverse the indentation lever 2710 with power, after rotating the indentation lever 2710 normally, receiving again, pushing in a lever 2720 and canceling the restraint of the receptacle lever 2720, in order to return the indentation lever 2710 and the receptacle lever 2720 to a original position, respectively. If the indentation lever 2710 is reversed, it will push in according to the energization force, and will follow and reverse on a lever 2710, and the receptacle lever 2720 will return to the original position which faces a slit 47 from a lower part,

and will be restrained by the original position in contact with a stopper (not shown). [0111] Bill introduction operation of each bill introduction machine 2700 and bill intake operation of each intake pipe 2150 of the bill conveyance pipe 2100 are performed one by one per 1 stage, and the bill introduced in the bill conveyance pipe 2100 is conveyed one by one per 1 stage. The counter 43 by which the terminal unit TU shown in drawing 37 is formed in the bill discharge machine 2800, the bill accumulation state detection sensor 2601 formed in this terminal unit TU by which it is prepared in vortex generator 2500 correspondence at the bill safe 2600, and the bill discernment section 42 is connected.

[0112] Moreover, the direction switcher 2580 is connected to vortex generator 2500 correspondence. Furthermore, the lock mechanism 2789 in which get it blocked and the bill detection sensor 2769 and the detection sensor 2701 and the drive circuit 2739 for bill introduction which drives a motor 2731, the shutter drive circuit 2759 that drives a solenoid 2751, and a solenoid 2781 are driven is connected about the bill eccentric machine 2800. The terminal unit TU shown in drawing 38 is formed in the specific slot machine correspondence prepared in the carrier system shown in drawing 26 . That is, this specific slot machine has the coin introduction branching machine 1700 for coin recovery. In the coin introduction machine 1400 of others [machine / coin introduction branching / 1700 / this], since a part of composition differs, the connection to the terminal unit TU also differs. That is, the connection about the coin introduction branching machine 1700 differs from the terminal unit dealing with the slot machine shown in drawing 36 . Then, only difference is explained. About a coin introduction branching machine, it is got blocked and the detection sensors 1401 and 1701, the drive circuit 1789 of a solenoid 1781, and the drive circuit 1759 of a solenoid 1751 are connected.

[0113] Next, operation of the carrier system of this invention is explained with reference to the flowchart of drawing 39 – drawing 43 . First, the carrier system described below makes in principle the 2nd system which conveys the 1st system and bill which convey coin the state where the vortex generator was always operated. On top of that, various equipments are controlled by on top of that, and the conveyed target body is conveyed from the start position to the purpose position. Of course, the control mode which is made to perform having entered and carrying out operation of an eddy generator as a part of control is also employable. However, an operation is always explained as a premise here.

[0114] Moreover, the carrier system described below is sent to an information processor using the signal-line group to which the various demand signals from equipments, such as a slot machine, and a state signal are assigned for every device. Moreover, the directions from an information processor and an instruction are sent to each device through Bus BL. Of course, although this invention is not limited to such a signal-transmission method, it gives explanation of operation a premise [such a system] here.

[0115] Drawing 39 is the general processing flow of an information processor PS.

Here, the demand which should be processed is chosen out of various demands (Step 101). Out of the queue set up beforehand, this selection takes up the thing of the 1st ranking and processes the demand. Usually, an information processor links in principle the various demand signals sent through the signal-line group SL to a queue at a chronological order, and performs them one by one from a high order so that it may mention later. That is, the contents about the demand which should be processed are extracted (Step 102), and processing corresponding to the contents is performed (Step 104). In the case of this invention, as contents of processing, the supply demand of coin, the recovery demand of coin, the recovery demand of a bill, etc. are mentioned, for example. And if processing is an end, it finishes, and when there is a matter it should continue further, again, it will return to Step 101 and processing will be performed (Step 105).

[0116] With the correspondence processing in the above-mentioned step 104, the processing for example, to a coin supply demand, the processing to the recovery demand of a bill, etc. are mentioned.

[0117] A setup of the queue used here for selection of a processing object is explained. This queue can say that it is equivalent to the table of priority in that processing is made by the order. First, an information processor PS investigates the input port of an interface 230 (Step 501). It judges whether a certain demand signal exists in which signal-line group (Step 503). When a demand signal exists, the requiring agency information which shows a requiring agency, and the contents of a demand are read about the input port concerned (Step 504). And when there is a demand unsettled otherwise, this demand signal is linked to the tail end of a queue (Step 505).

[0118] Here, it investigates beforehand whether a certain priority is given about the demand signal concerned (Step 506). A queue is reconfigured when a certain priority is given (Step 507). By the above, the object of the selection performed in Step 101 of above-mentioned drawing 39 can be set up beforehand. An information processor PS performs this processing at any time.

[0119] Next, processing of a coin supply demand is explained with reference to drawing 40. A coin supply demand is advanced by this processing, and an information processor outputs change directions of the selector valve 1331 of the branching machine 1300 to a requiring agency by it (Step 201). These change directions are sent through Bus BL to the corresponding terminal unit TU. The terminal unit TU which received this directs to change a selector valve 1331 to a branching state to the drive circuit 1359 of the branching machine 1300.

[0120] On the other hand, an information processor PS supports supply of coin to the terminal unit TU corresponding to the coin feeder 1200 (Step 202). In response, the terminal unit TU directs it to make the drive circuit 1222 drive a motor 1221. Consequently, a motor 1221 drives, the coin send section 1220 operates, and coin is sent out to the conveyance pipe 1100 for coin. Then, it appears in the vortex produced in the conveyance pipe 1100 for coin, and the coin concerned is conveyed.

And when a selector valve reaches the branching machine 1300 which has changed to branching, coin collides with a selector valve and has the advance to the point prevented. Moreover, it is sent into the coin attaching part 1360.

[0121] At this time, by the coin feeder 1200, counting of the number of coin to which a counter 1231 is sent out is carried out, and the result is sent to the terminal unit TU. In the terminal unit TU, it judges whether the supply number of sheets defined beforehand was reached. And if it sends out the number of sheets of a schedule, the drive circuit 1222 will be ordered to perform a halt of a motor 1221. And PS notice of the completion signal of supply which shows that supply of coin finished is given at an information processor using the signal-line group SL. It supervises whether the information processor PS carried out fixed time progress of this signal being sent from waiting (Step 203) and the time of having been sent (Step 204). You may be made to perform this surveillance in the terminal unit TU. Here, the reason for which it waits takes into consideration existence of the coin in which the inside of the conveyance pipe 1100 for coin is sent fixed time from a coin feeder before a branching machine.

[0122] After carrying out fixed time progress, an information processor PS directs the directions which return a selector valve to the previous terminal unit TU (Step 205). Thereby, a series of processings of coin supply finish. In addition, since the coin accumulation state detection sensor 33 is still detecting after this that coin runs short in the game machine hopper 30 which received supply when supply of coin does not fulfill an initial complement, a coin supply demand will be succeedingly advanced from the terminal unit TU concerned. Therefore, in drawing 39, an information processor will choose the slot machine same as a processing object again. Therefore, supply will continue until an initial complement is filled. In addition, when such a state continues, there is a problem of the service to other equipments becoming impossible. Then, in drawing 43, as mentioned above, concentration of service to specific equipment can be prevented by giving priority about other slot machines etc. like Step 506.

[0123] Next, the coin recovery processing shown in drawing 41 is explained. In this processing, the change of a selector valve is first directed to the branching machine 1300 for coin recovery through a terminal unit (Step 301). Subsequently, the directions which open a shutter are sent to the coin introduction machine 1400 of a slot machine with the coin recovery demand through the terminal unit TU (Step 302). And since it is the same as the case of the branching machine mentioned above, after waiting fixed time (Step 303), the directions which return a selector valve are sent to the branching machine 1300 for coin recovery through the terminal unit TU (Step 304).

[0124] Thereby, a series of processings of coin recovery finish. Next, the procedure of bill recovery is explained with reference to drawing 42. First, an information processor PS directs introduction of a bill to the terminal unit TU (Step 405). The terminal unit TU directs introduction of a bill in the bill introduction drive circuit

2739. Since it already explained, the procedure of introduction of a bill is not repeated here.

[0125] The signal of the input port which corresponds [whether introduction ended the information processor PS and] is seen and investigated (Step 406). If the notice of an introductory end is received, an information processor PS will take out bill prehension directions to the terminal unit TU which has jurisdiction [machine / bill eccrisis / 2800] (Step 408). If the signal which shows that the information processor PS caught the above-mentioned bill is received (Step 410), eccrisis of a bill is directed to the terminal unit TU (Step 411). In addition, since the procedure of bill eccrisis was already explained, it does not repeat explanation here.

[0126] An information processor PS looks at and investigates the signal of the input port which corresponds [whether eccrisis was completed and or not]. If the notice of an eccrisis end is received, an information processor PS will end introduction of a bill, and processing of eccrisis (Step 412). An information processor PS returns to Step 105 shown in drawing 39 , whenever each processing of coin supply, coin recovery, bill recovery, etc. finishes. And the next processing demand is performed. In addition, an information processor performs what various data, such as an input of coin and an input of a bill, etc. are collected from a terminal unit other than the processing mentioned above, and is reported to management computer MC.

[0127] In addition, the explanation mentioned above showed the example which makes the vortex the airstream which flows in the conveyance pipe 2100 for bills. However, in the case of the conveyance pipe 2100 for bills, even if it is not only a vortex but a rectilinear-propagation style, it does not interfere. Of course, when a vortex is used, the effect that a bill stops being able to contact the wall of the conveyance pipe 2100 easily can be expected. Moreover, although the gestalt of the aforementioned implementation showed that from which bills are collected to the bill safe 2600, a bill is directly conveyed for example, not only this but in the vortex generator 2500 installed in the office, and you may make it a help recover the bill carried in the vortex generator 2500.

[0128]

[Effect of the Invention] Since according to the game medium carrier system concerning this invention insertion installation was carried out and reversal of an insertion pipe of an insertion pipe was enabled in the place in which the game medium in a game medium conveyance pipe tends to pile up Since the airstream exists in the core of the previous insertion pipe with which it fell after the game medium which piled up in the wall lower part of an insertion pipe was able to pull up with frictional resistance with the wall of an insertion pipe, and the game medium fell The ejection workability of a game medium becomes unnecessary and it can improve user-friendliness while a game medium rides on an airstream, and comes to be conveyed again and its conveyance workability of a game medium improves.

[Translation done.]

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the important section front view showing an example of the bill introduction machine used in this invention.

[Drawing 2] It is the plan showing the composition and the example of arrangement of an island in an amusement center.

[Drawing 3] It is the block diagram showing the outline of the carrier system for amusement centers of this invention.

[Drawing 4] It is the block diagram showing the outline of the composition of the 1st operation gestalt of the carrier system for amusement centers of this invention.

[Drawing 5] It is explanatory drawing showing the outline of the composition of a slot machine.

[Drawing 6] It is the perspective diagram showing the 1st example of the evil generating unit used in this invention.

[Drawing 7] It is the side elevation showing an example of the composition of the auxiliary slit with which the above-mentioned eddy generating unit is equipped.

[Drawing 8] It is the plan showing an example of the flange for attaching the above-mentioned auxiliary slit in the upper surface of an eddy generating unit.

[Drawing 9] It is the perspective diagram showing the 2nd example of the evil generating unit used in this invention.

[Drawing 10] It is explanatory drawing showing the outline of an example of the coin feeder and coin safe which are used in this invention.

[Drawing 11] It is the cross section showing an example of the composition of the branching machine used in this invention.

[Drawing 12] It is the cross section showing the composition of the selector-valve portion of the above-mentioned branching machine.

[Drawing 13] It is the cross section showing the composition of the breaker style of the selector valve in the above-mentioned branching machine.

[Drawing 14] It is the cross section showing other examples of the above-mentioned

branching machine.

[Drawing 15] It is explanatory drawing showing the physical relationship of the branching machine within a slot machine, and a game machine hopper.

[Drawing 16] It is the cross section showing an example of the composition of the coin introduction machine for introducing coin into the conveyance way for coin.

[Drawing 17] It is the cross section showing the composition of the breaker style of the shutter in the above-mentioned coin introduction mechanism.

[Drawing 18] It is the cross section showing other examples of the composition of the coin introduction machine used by this invention.

[Drawing 19] It is explanatory drawing showing the composition of an example of the vortex generator for making the conveyance pipe for bills generate a vortex.

[Drawing 20] It is explanatory drawing showing the composition of other examples of the vortex generator for making the conveyance pipe for bills generate a vortex.

[Drawing 21] F, G, and H are explanatory drawings showing the process of eccrasis of the bill in a bill eccrasis machine.

[Drawing 22] It is the perspective diagram showing other examples of the bill introduction machine used in this invention.

[Drawing 23] It is the perspective diagram showing an example of the supply state of the bill to the above-mentioned bill introduction machine.

[Drawing 24] It is the perspective diagram showing an example of the composition of the shutter formed in the above-mentioned bill introduction machine.

[Drawing 25] It is the perspective diagram showing an example of operation of the shutter formed in the above-mentioned bill introduction machine.

[Drawing 26] It is the block diagram showing the outline of the composition of the 2nd operation gestalt of the conveyed body carrier system of this invention.

[Drawing 27] It is the cross section showing an example of the composition of the coin introduction branching machine used in the operation gestalt of the above 2nd.

[Drawing 28] It is the cross section showing an example of the shutter of the above-mentioned coin introduction branching machine, and the drive of a selector valve.

[Drawing 29] It is the block diagram showing the outline of the composition of the 3rd operation gestalt of the conveyed body carrier system of this invention.

[Drawing 30] It is the perspective diagram showing an example of the composition of the eddy generating unit used with the gestalt of this operation.

[Drawing 31] It is the block diagram showing the outline of the whole composition of the control system used by this invention.

[Drawing 32] It is the block diagram showing the composition of the information processor used by this invention.

[Drawing 33] It is the block diagram showing a coin feeder and the terminal unit corresponding to this.

[Drawing 34] It is the block diagram showing the terminal unit corresponding to these with a coin safe and a branching machine.

[Drawing 35] It is the block diagram showing a branching machine and the terminal

unit corresponding to this.

[Drawing 36] It is the block diagram showing the various devices in a slot machine, and the terminal unit corresponding to these.

[Drawing 37] It is the block diagram showing a bill eccentric machine and the terminal unit corresponding to this.

[Drawing 38] It is the block diagram showing the various devices in a slot machine, and the terminal unit corresponding to these.

[Drawing 39] It is the flow chart which shows the procedure of the processing in information processing system.

[Drawing 40] It is the flow chart which shows the procedure of branching processing operation of a branching machine.

[Drawing 41] It is the flow chart which shows the procedure of a coin introduction machine.

[Drawing 42] It is the flow chart which shows the procedure of bill introduction and bill eccentric.

[Drawing 43] It is the flow chart which shows the procedure which sets up the order of processing which investigated the various demands from a terminal unit.

[Drawing 44] It is the block diagram showing the example of the carrier system which has only the 2nd carrier system among the carrier system shown in drawing 4.

[Drawing 45] It is the important section expansion front view showing an example of the bill introduction machine used in this invention.

[Drawing 46] It is operation explanatory drawing of the bill introduction machine used in this invention.

[Drawing 47] It is operation explanatory drawing of the bill introduction machine used in this invention.

[Drawing 48] It is operation explanatory drawing of the bill introduction machine used in this invention.

[Drawing 49] It is the important section cross section of a stay prevention means used in this invention.

[Drawing 50] It is arrangement explanatory drawing of a stay prevention means used in this invention.

[Drawing 51] It is operation explanatory drawing of a stay prevention means used in this invention.

[Drawing 52] It is operation explanatory drawing of a stay prevention means used in this invention.

[Description of Notations]

CS -- Control system

2 -- Game machine (slot machine)

40 -- Bill accession department

46 -- Standby stage

47 -- Slit

1100 -- Conveyance pipe for coin

1120 -- Insertion pipe
1125 -- Wheel gear
1126 -- Hold crevice
1140 -- Pinion
1400 -- Coin introduction machine
2100 -- Conveyance pipe for bills
2150 -- Intake pipe
2500 -- Vortex generator
2700 -- Bill introduction machine
2710 -- Indentation lever (pinching member)
2720 -- Receptacle lever (pinching member)
2730 -- Axis of rotation

[Translation done.]

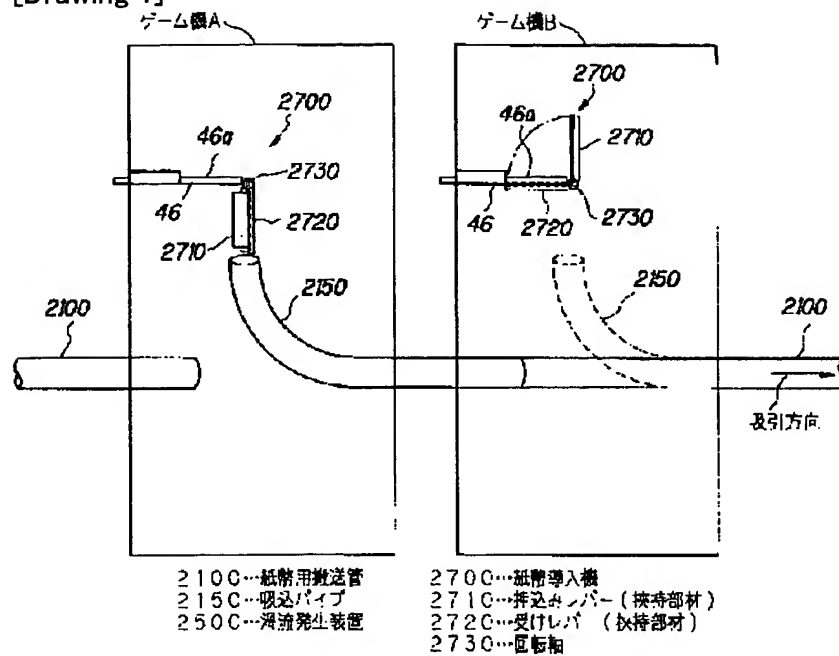
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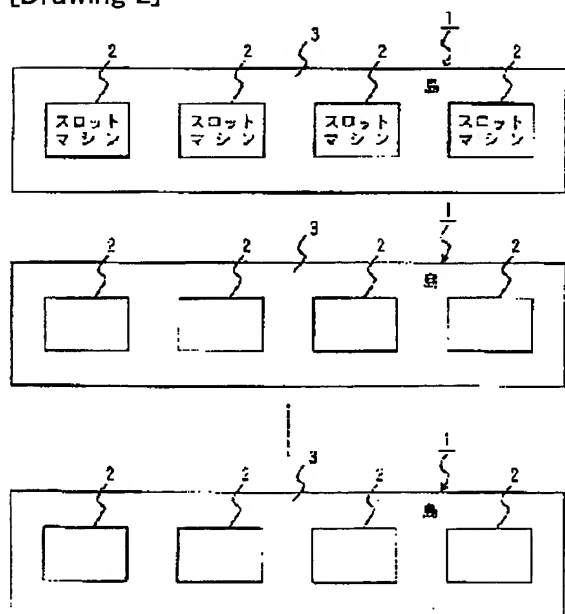
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- 3.In the drawings, any words are not translated.

DRAWINGS

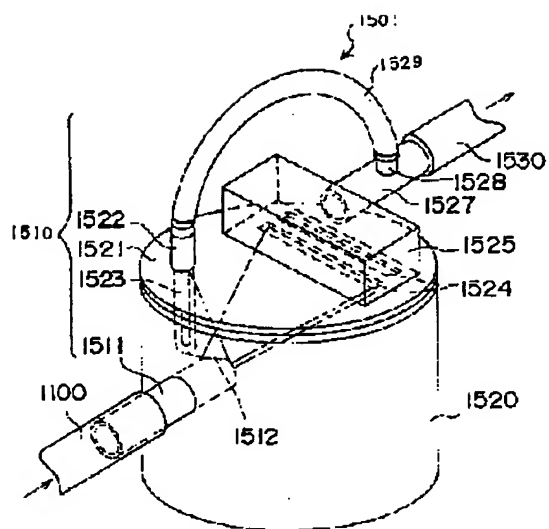
[Drawing 1]



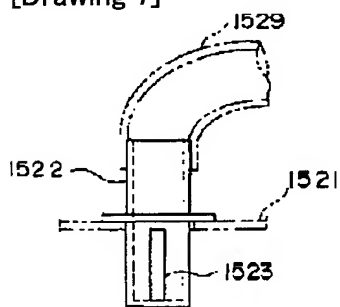
[Drawing 2]



[Drawing 6]



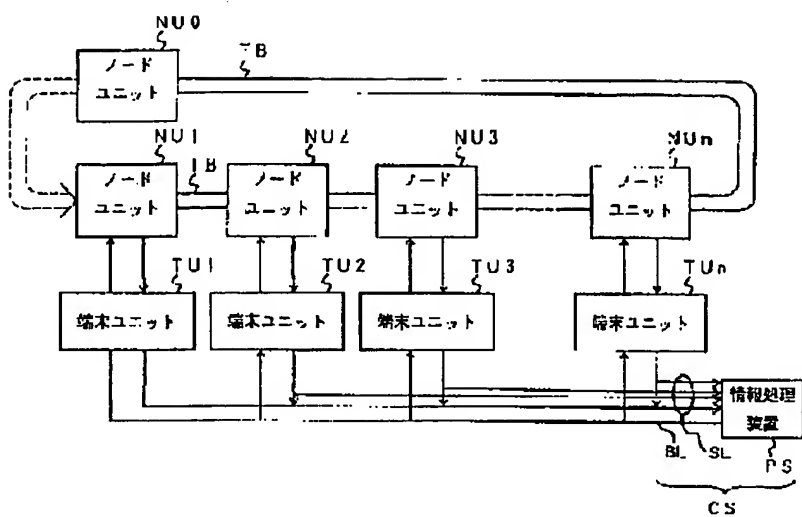
[Drawing 7]



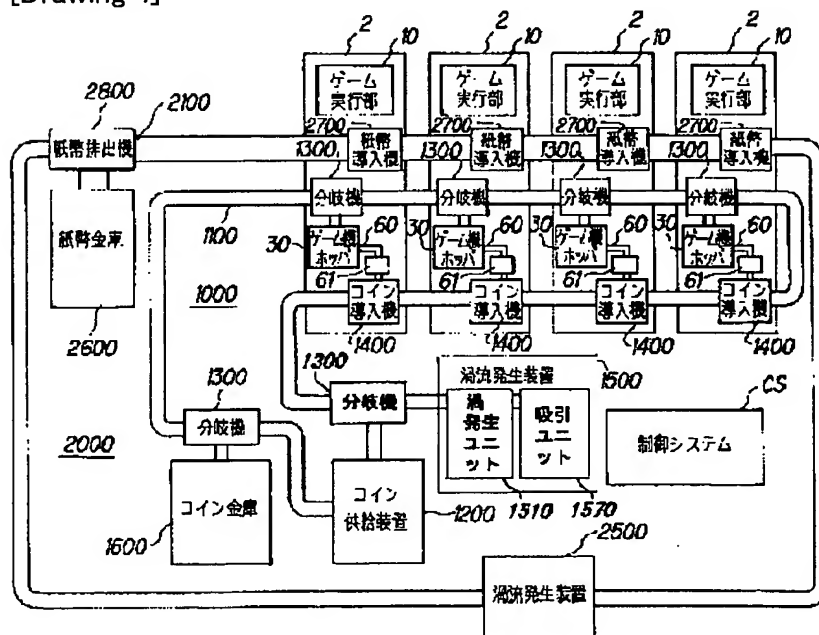
[Drawing 8]



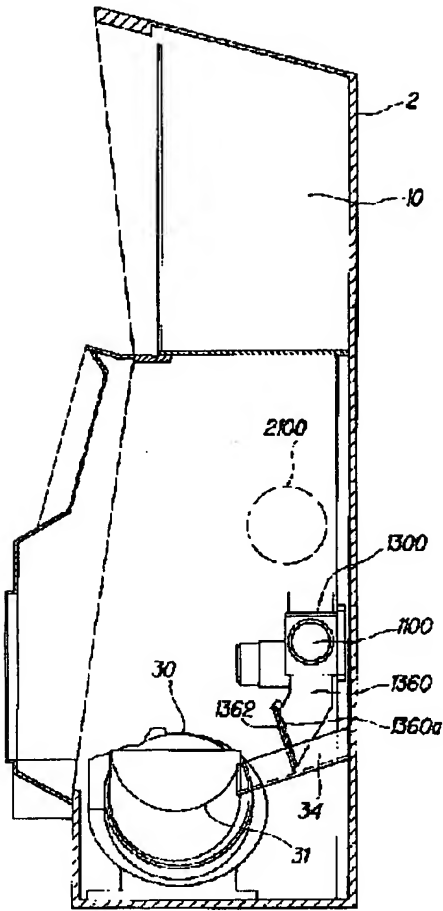
[Drawing 3]



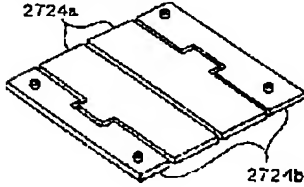
[Drawing 4]



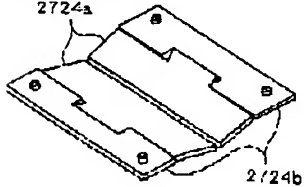
[Drawing 15]



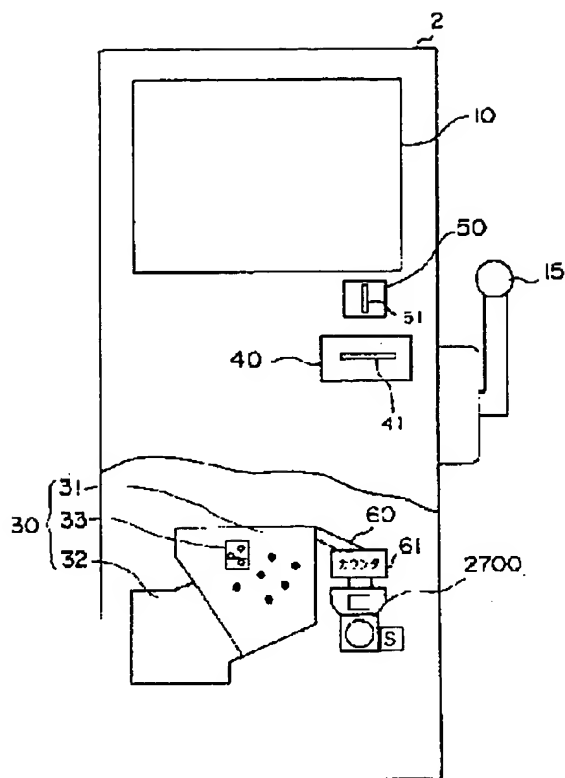
[Drawing 24]



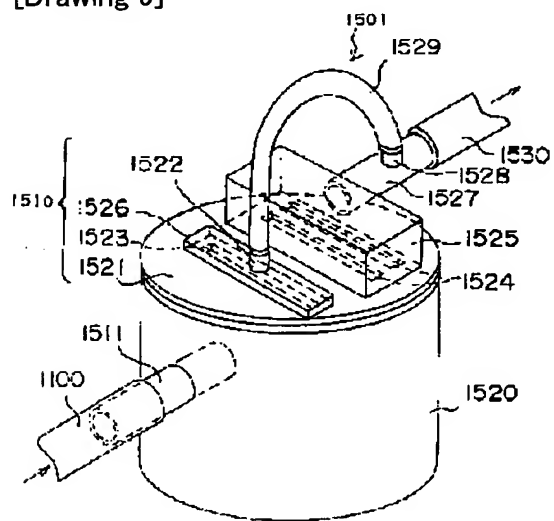
[Drawing 25]



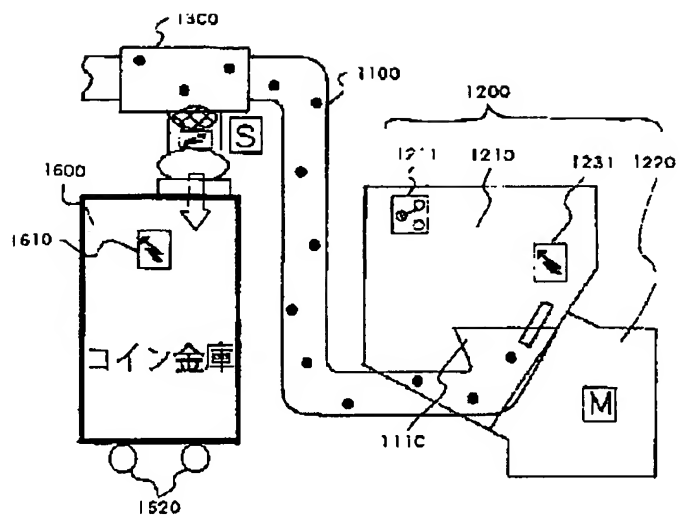
[Drawing 5]



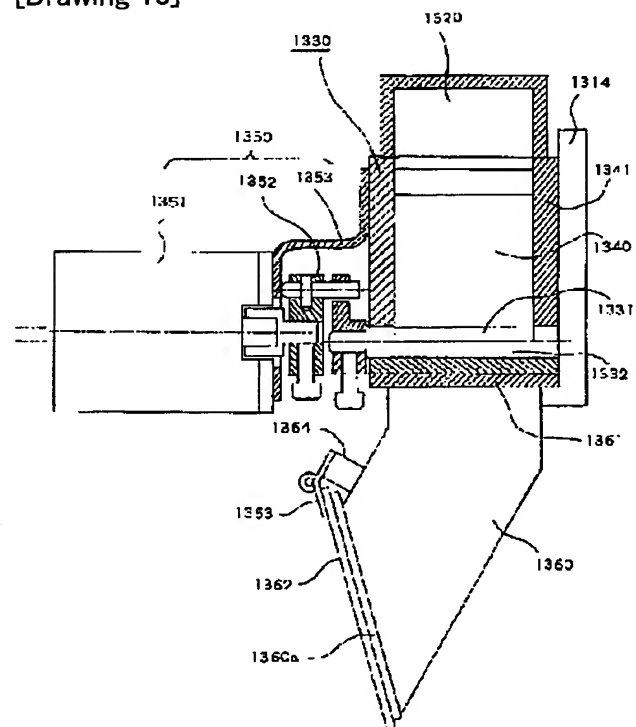
[Drawing 9]



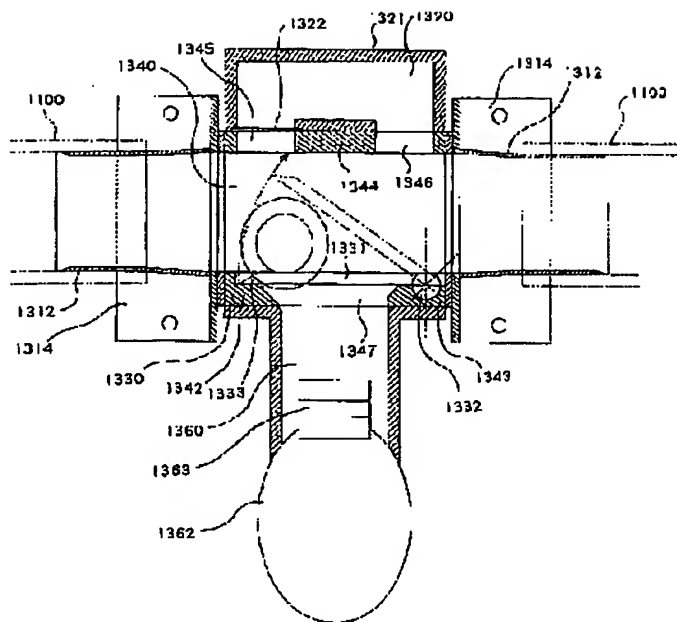
[Drawing 10]



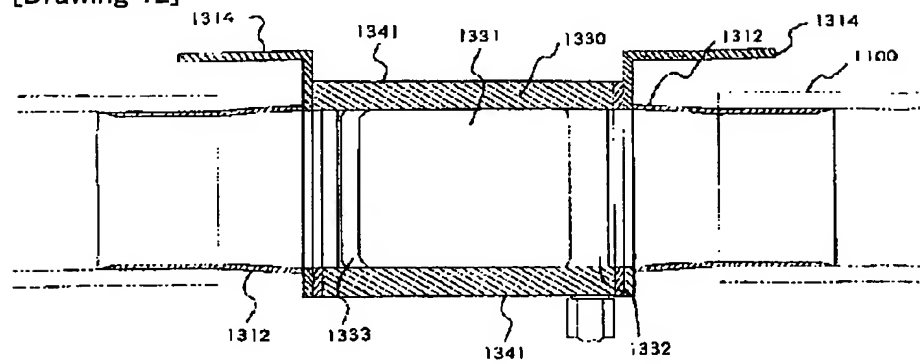
[Drawing 13]



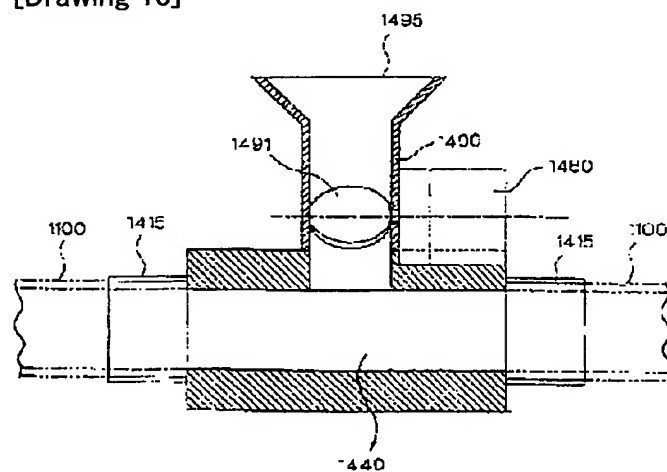
[Drawing 11]



[Drawing 12]

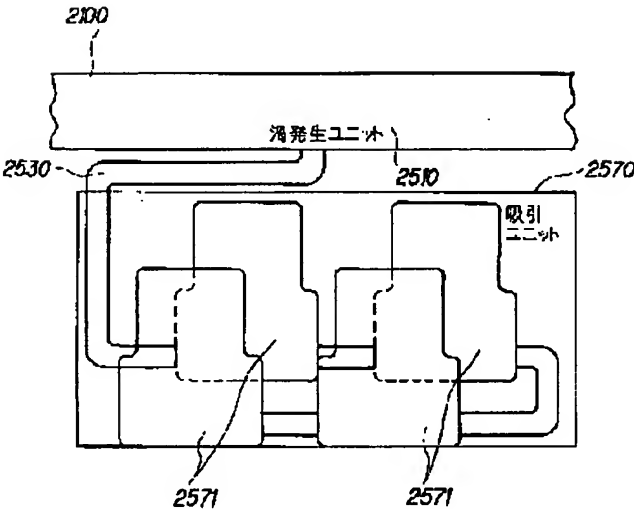


[Drawing 18]

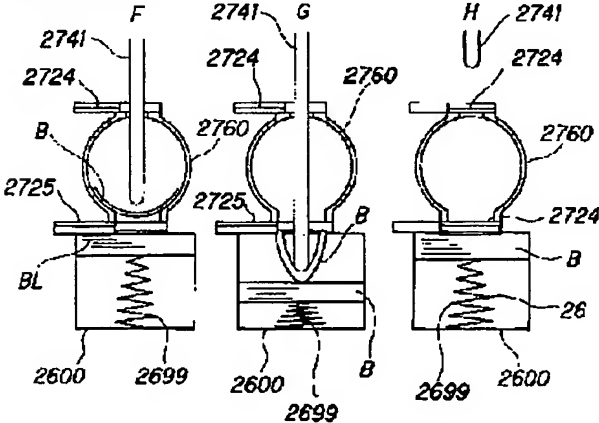


[Drawing 20]

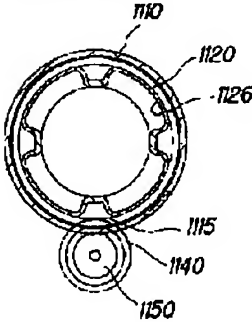
2500



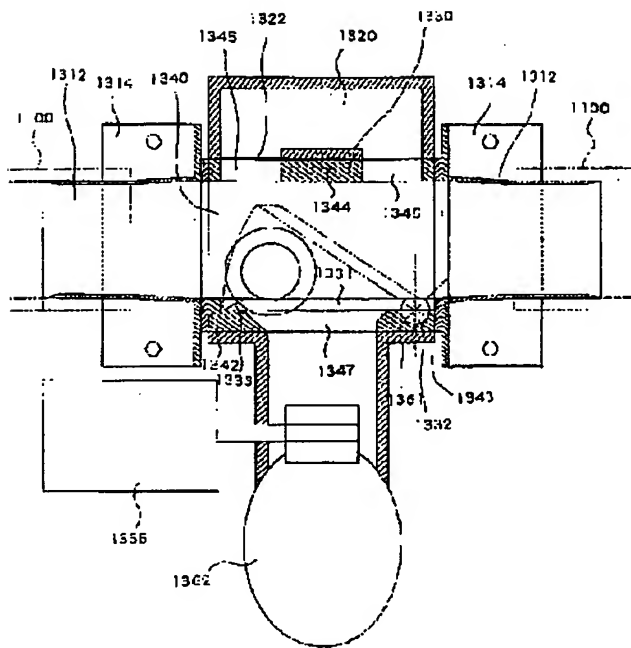
[Drawing 21]



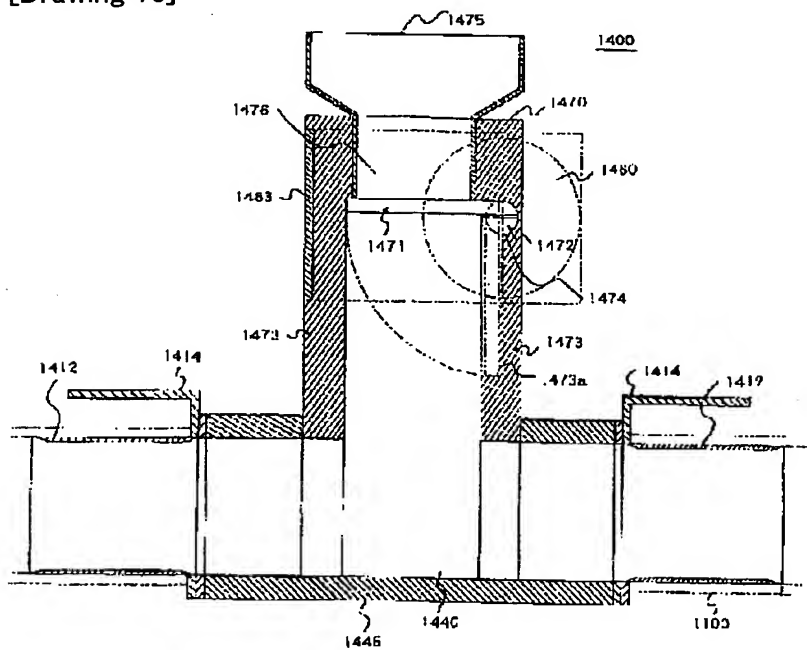
[Drawing 51]



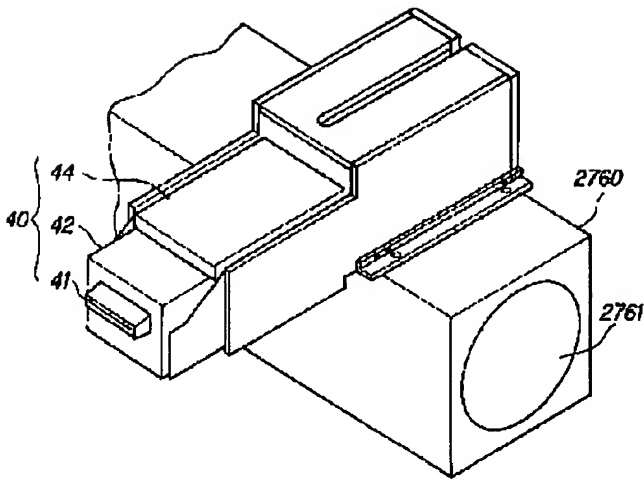
[Drawing 14]



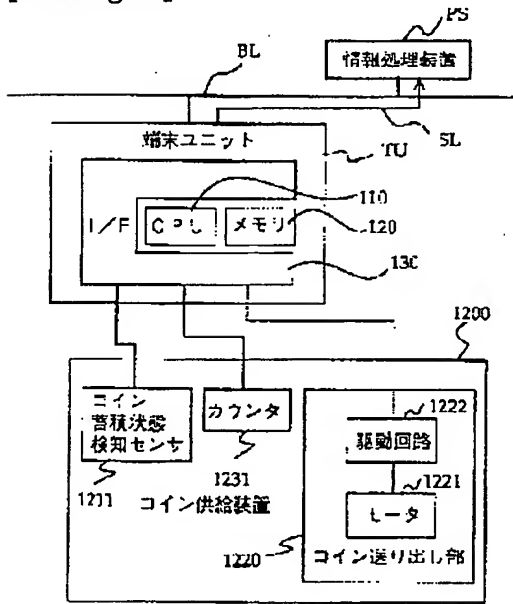
[Drawing 16]



[Drawing 22]

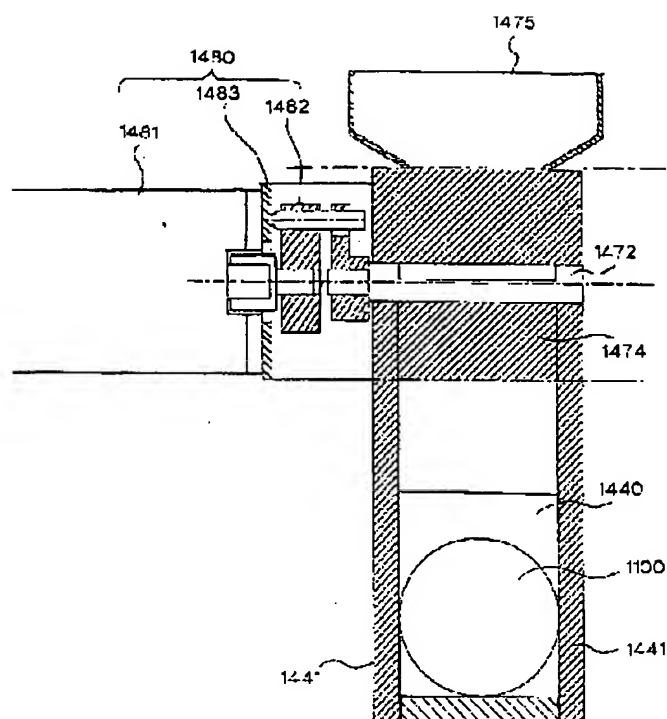


[Drawing 33]

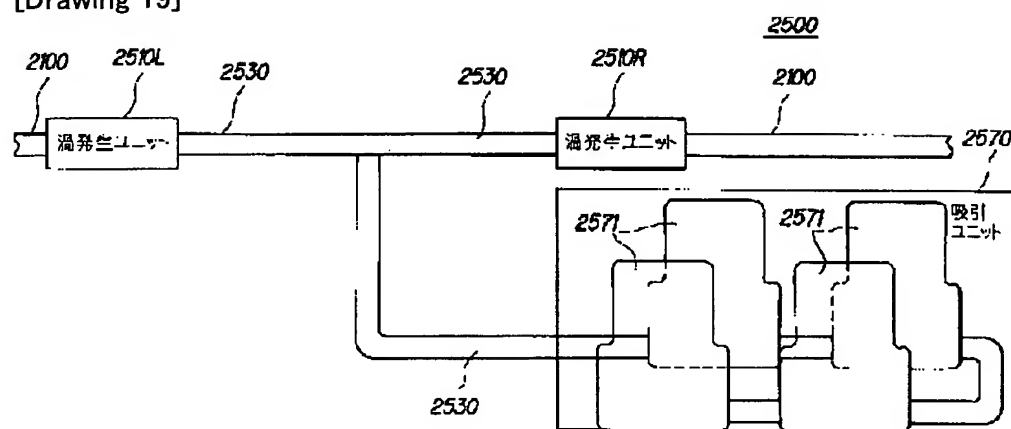


[Drawing 39]

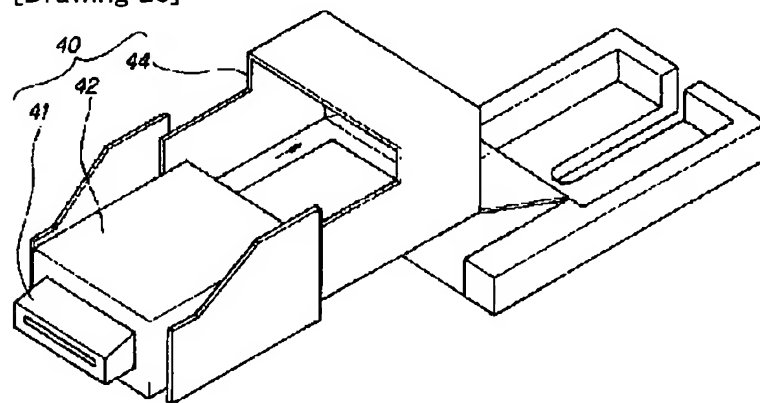
[Drawing 17]



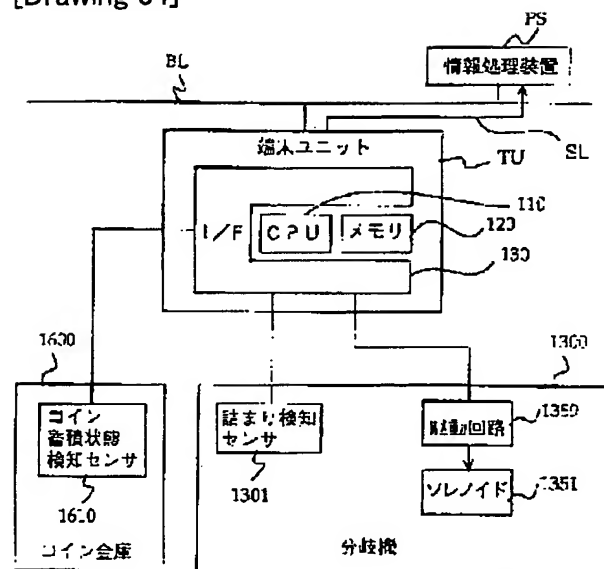
[Drawing 19]



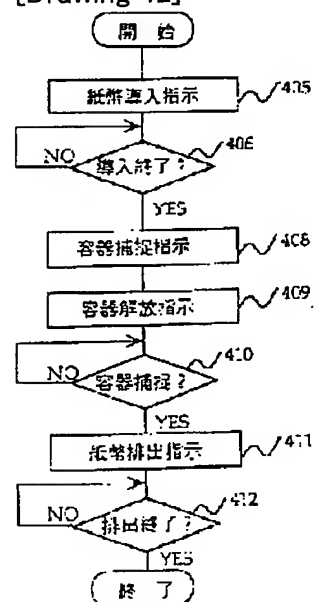
[Drawing 23]



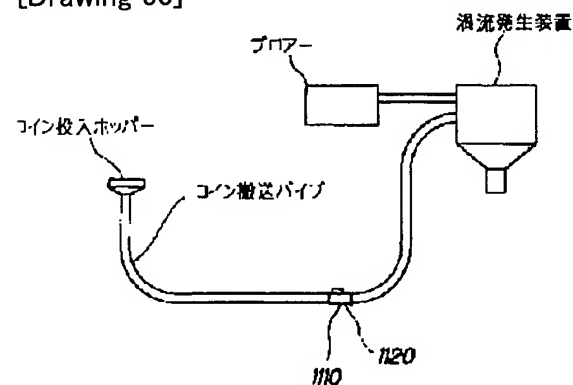
[Drawing 34]



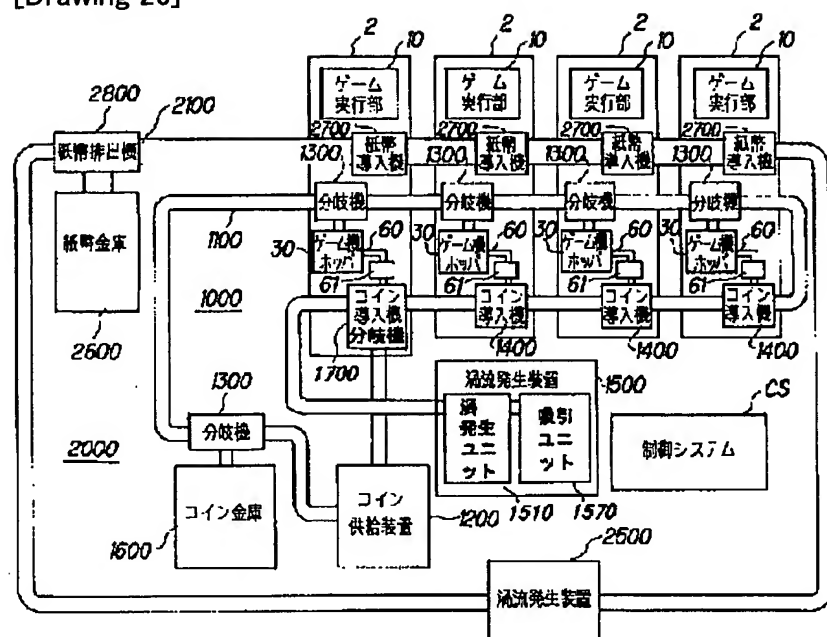
[Drawing 42]



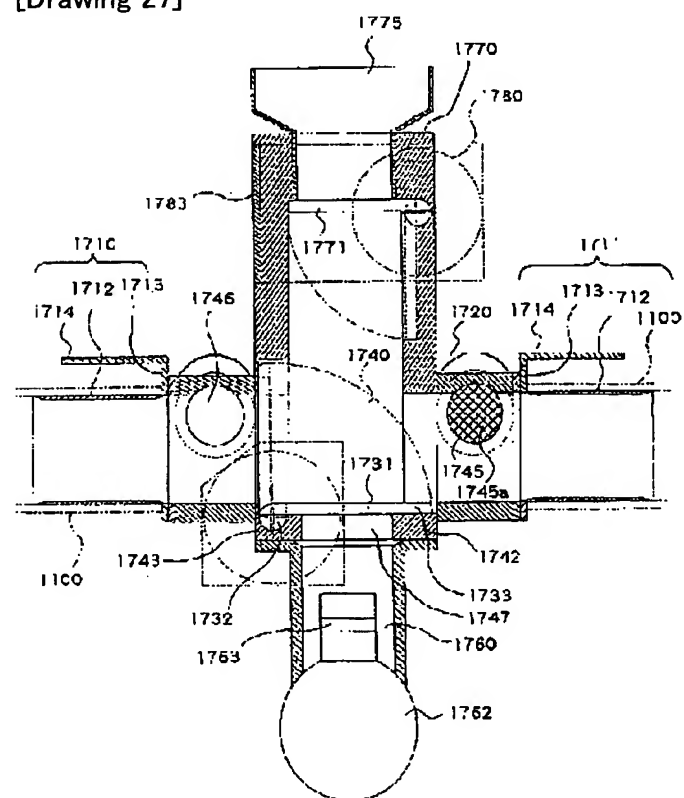
[Drawing 50]



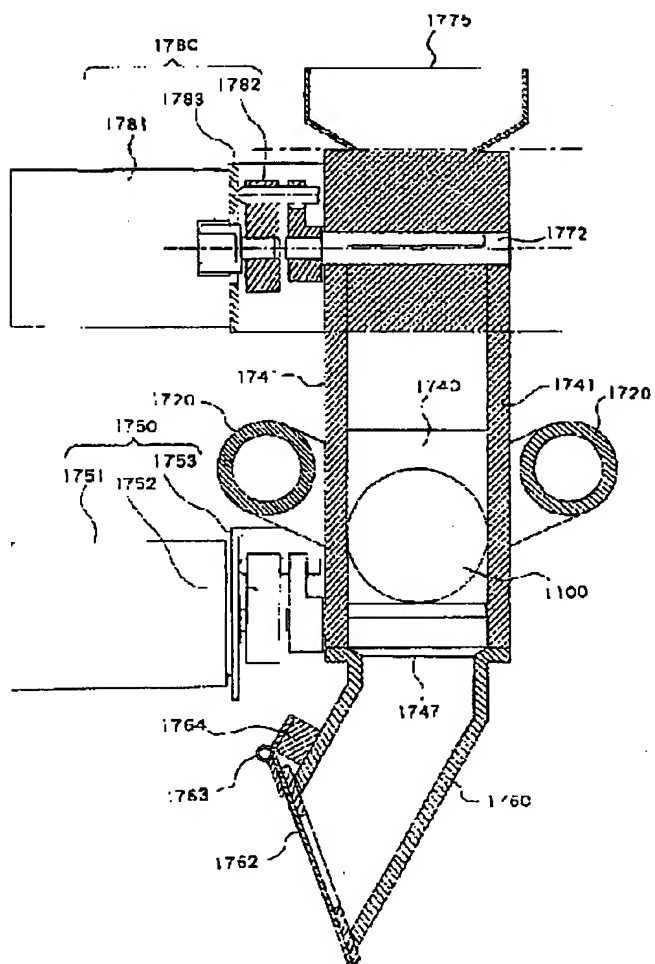
[Drawing 26]



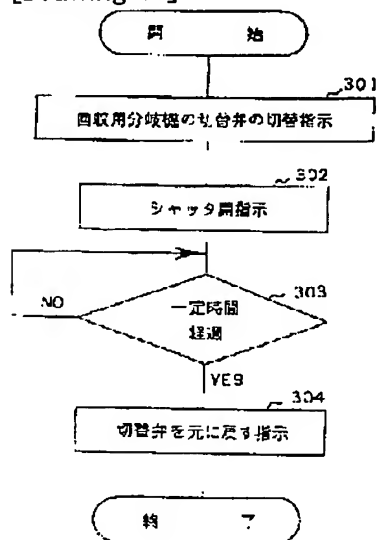
[Drawing 27]



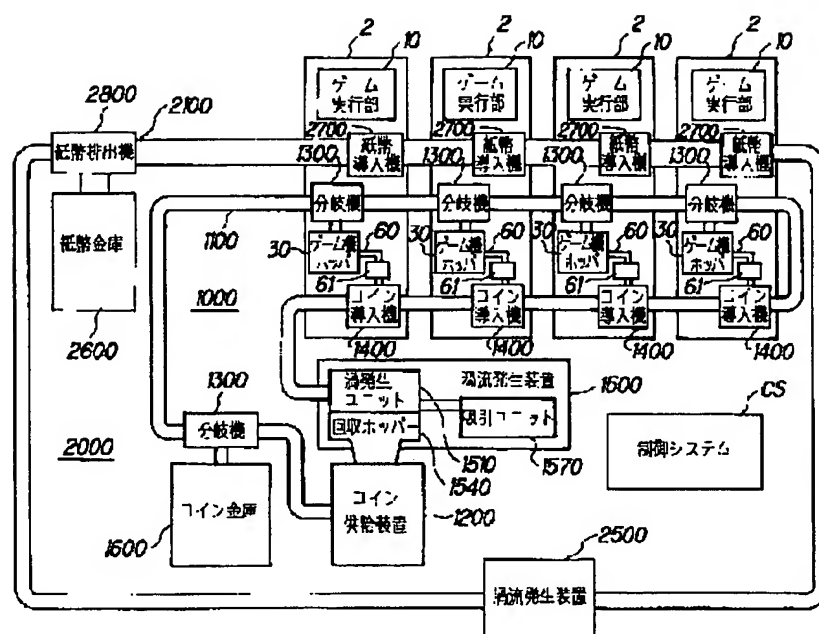
[Drawing 28]



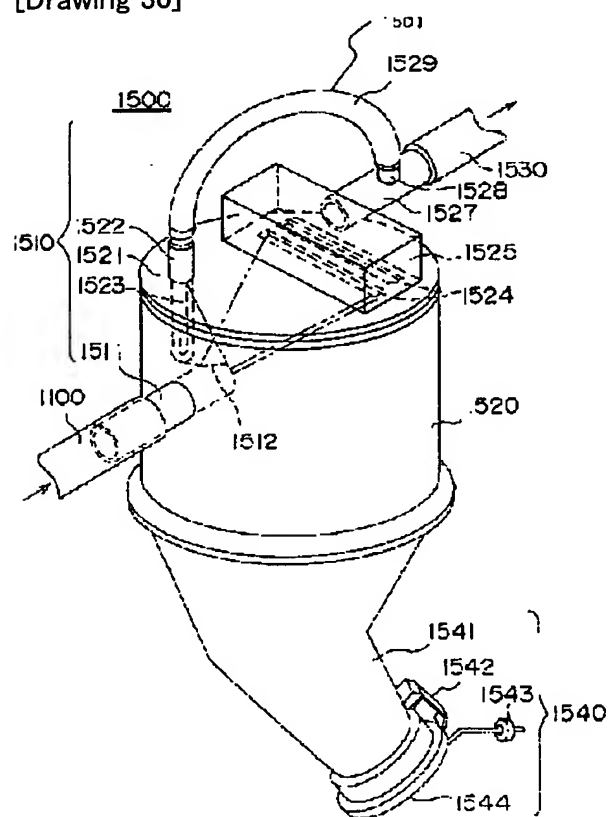
[Drawing 41]



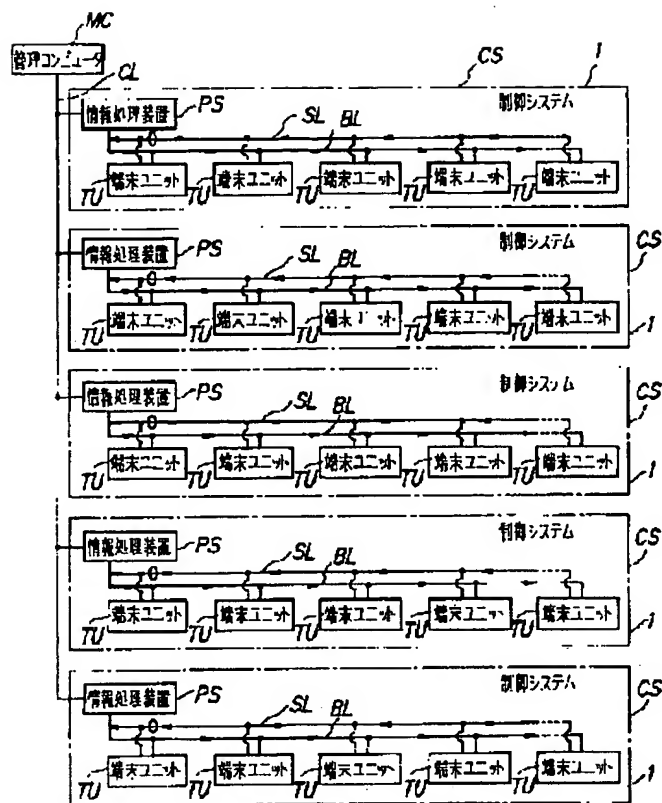
[Drawing 29]



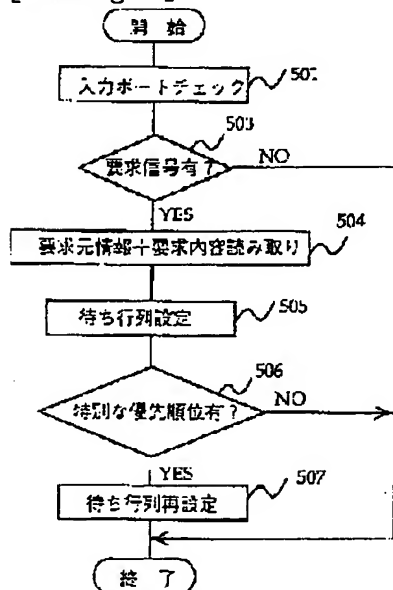
[Drawing 30]



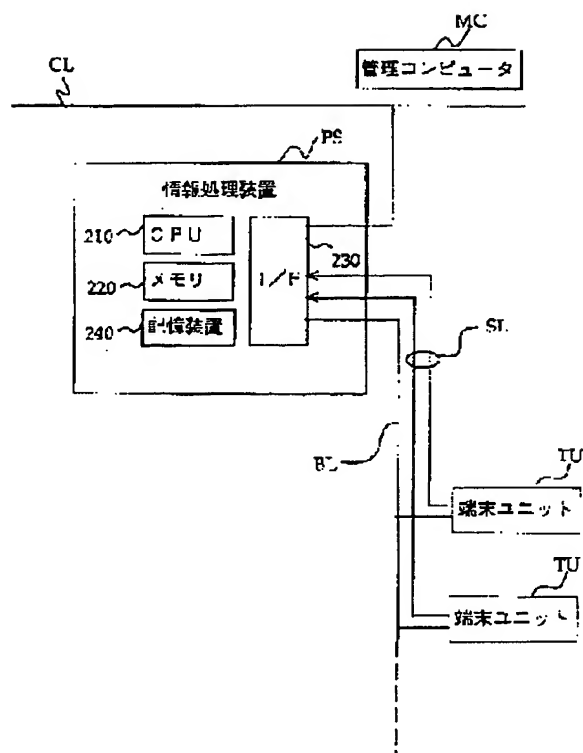
[Drawing 31]



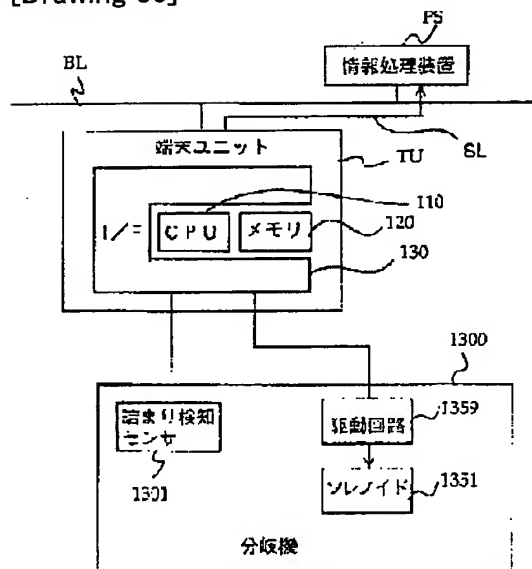
[Drawing 43]



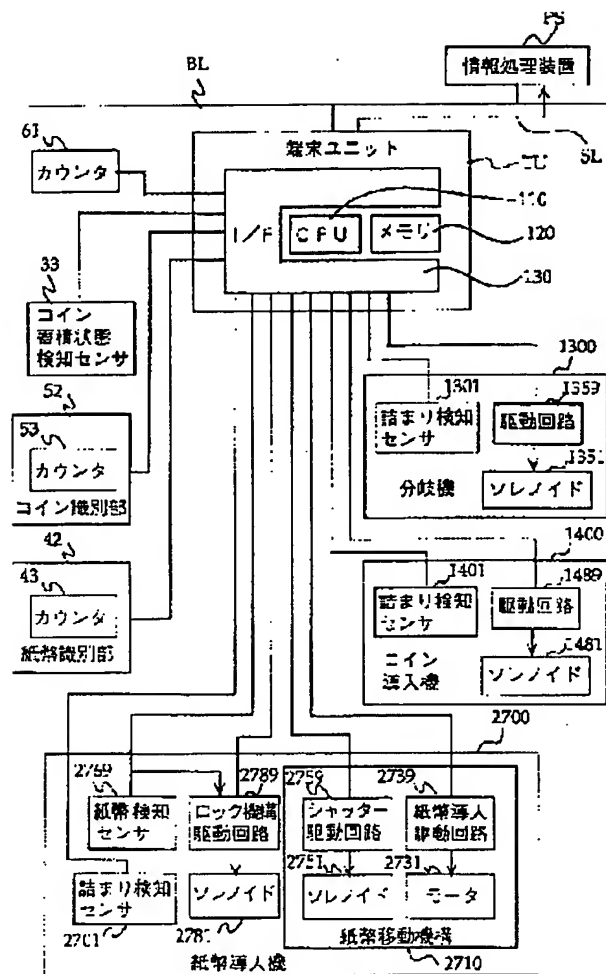
[Drawing 32]



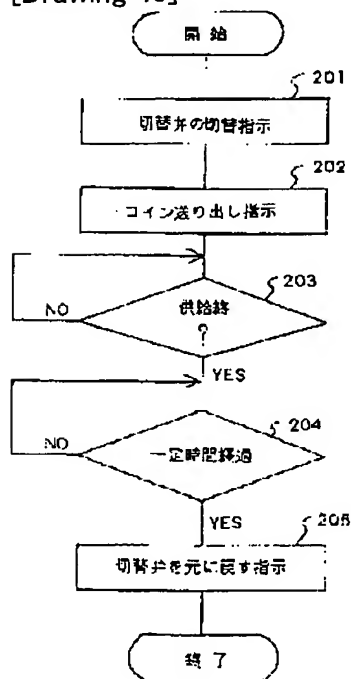
[Drawing 35]



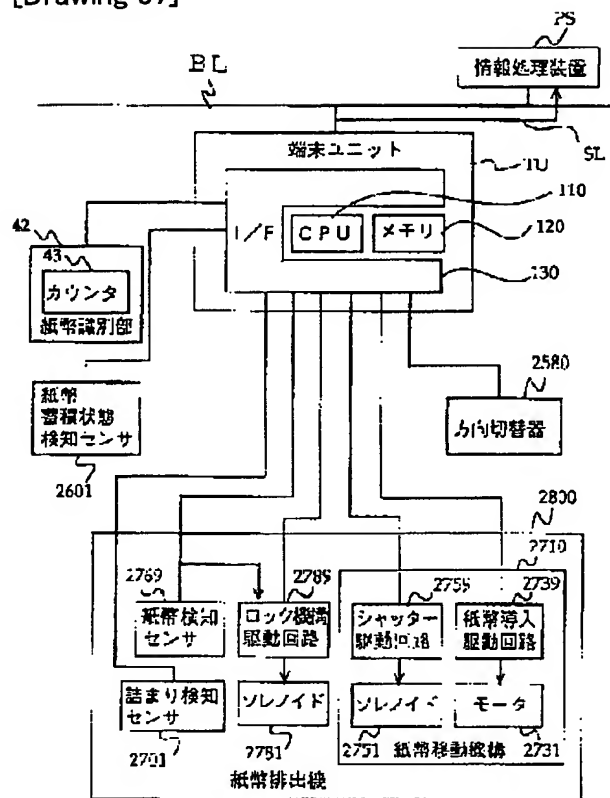
[Drawing 36]



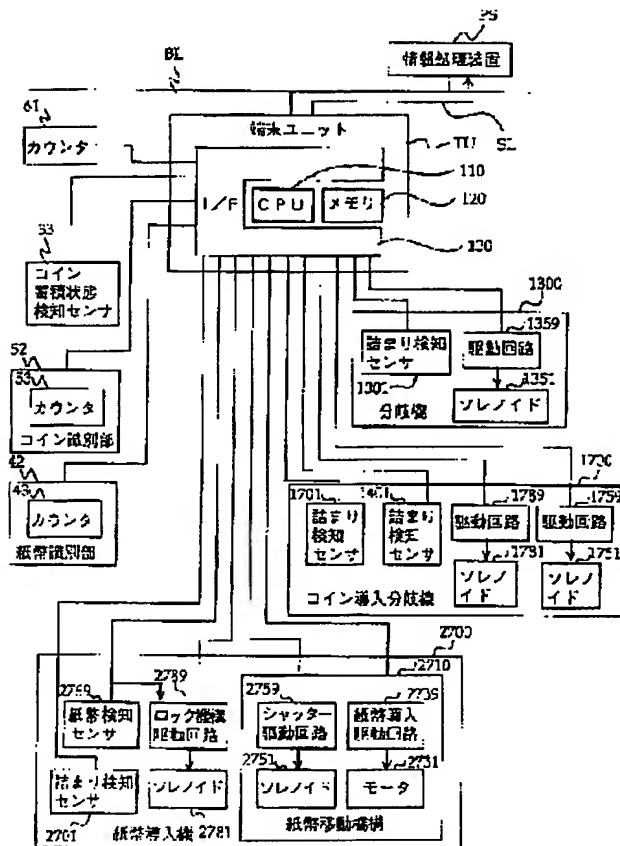
[Drawing 40]



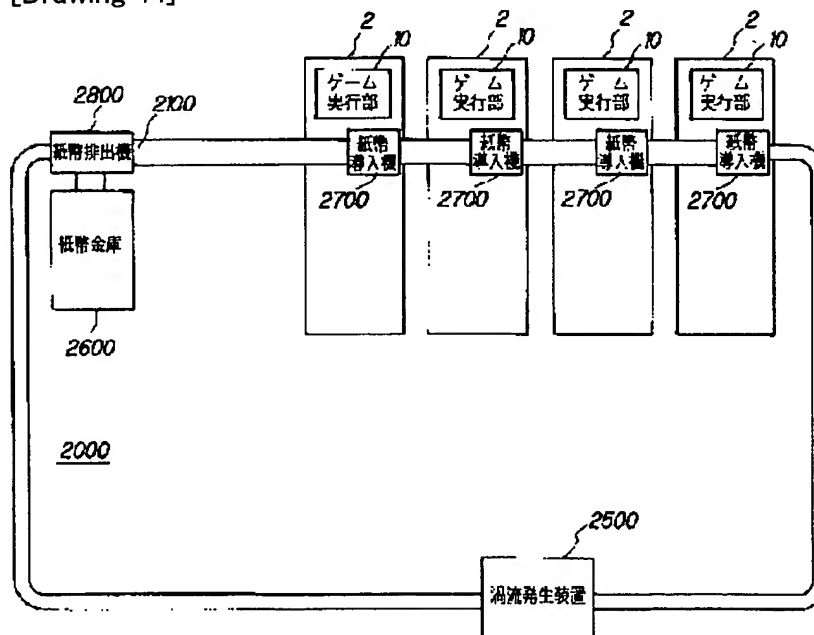
[Drawing 37]



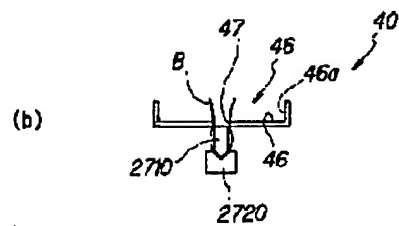
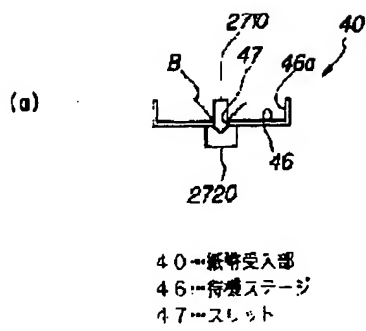
[Drawing 38]



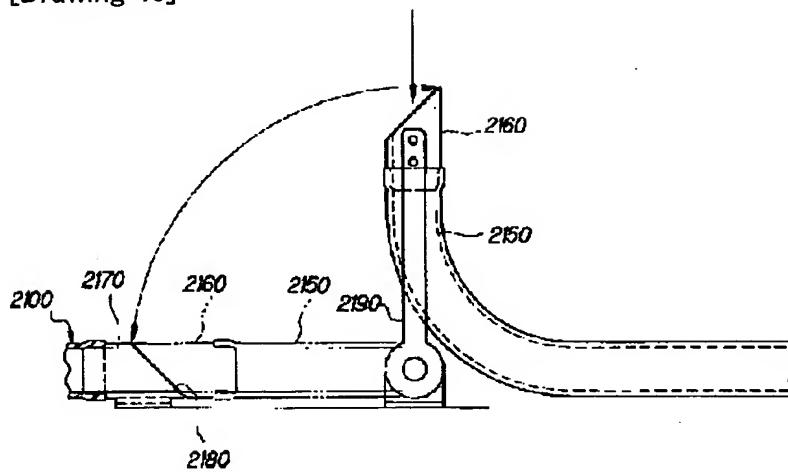
[Drawing 44]



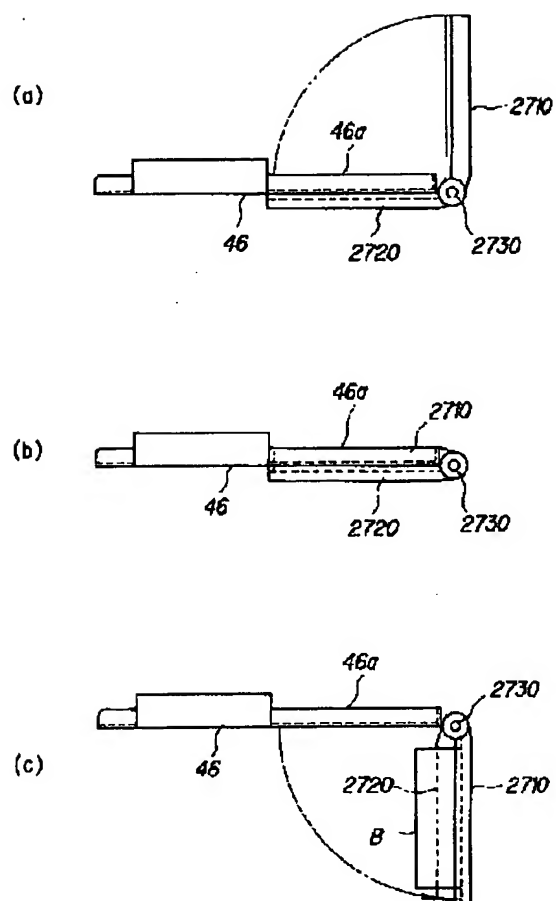
[Drawing 48]



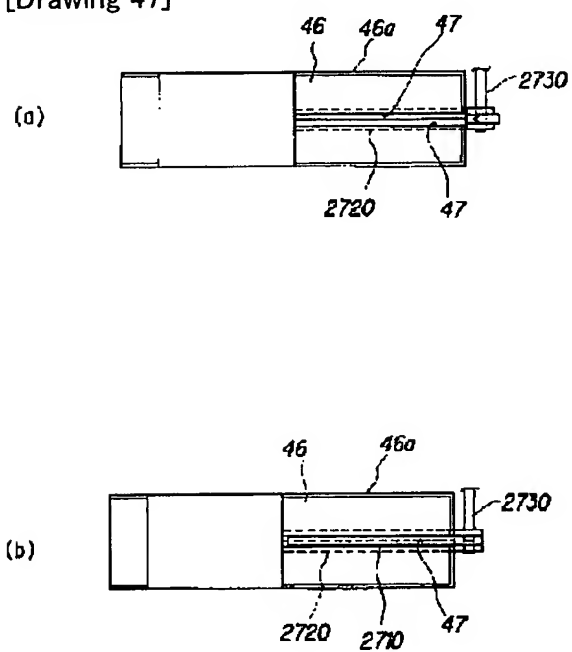
[Drawing 45]



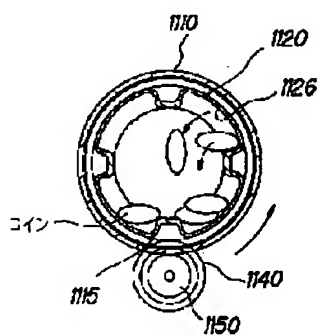
[Drawing 46]



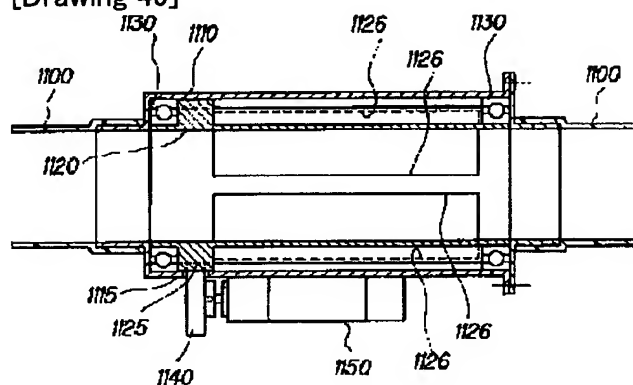
[Drawing 47]



[Drawing 52]



[Drawing 49]



- 1100...コイン用搬送管
- 1120...挿入管
- 1125...ホイールギヤ
- 1126...収容凹部
- 1140...ピニオン
- 1400...コイン導入機

[Translation done.]